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Comment

THE relative importance that will be attached to any phase of industrial management by the American industrialist at any given time must depend upon what seems to be either wise or expedient from the profit making standpoint. In larger organizations, it is not uncommon to find a whole staff at work on some plan for better inventory control or more accurate costs, only to learn on the morrow that "top management" wishes to shift the emphasis to better quality or some other immediate problem.

Those who have to carry out these assignments are apt to abandon reluctantly the work in which they have been immersed, and they are prone to criticize or question the wisdom of those higher up—the managers. Often they do not appreciate that the latter must view the organization in its broader aspects and that for them no one cog in the wheel is more important than any other—whether it be sales, purchasing, manufacturing, or personnel. Quite naturally, however, their attention is called to the weak spots in the organization and to these they must devote the time, effort and money required for effective remedy or adjustment when needed.

Through the media of professional societies, published periodicals, inter-plant communications, and the like, industry as a whole soon becomes aware of these shifts. Very quickly, industrial managers everywhere concern themselves with the same or similar problems, and only a few ever stop to consider what meaning the new emphasis may have for them in particular. They assume that it is either a trend in management to which they should pay attention, or appreciate that if they are to profit from the experience of others, they must take action. Because the smaller firms look to the larger ones for leadership, a great responsibility is imposed on our more outstanding and leading manufacturers in pointing the way.

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Human relations is king at the moment. The unsettlement caused by the depression, coupled with the necessity for lower costs, has focused attention upon labor and labor management. Ideas on any subject relating to this field, therefore, cannot fail to receive attention.

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Job evaluation and motion and time study are two tools of management that are uppermost in the minds of present day managers. The first is an approach to a scientific method in dealing with what the worker should be paid in fairness to himself and his employer.

(Please turn to page 116)

Developments of the Labor Movement

Leading to the A. F. of L. and the C. I. O.

By HERMAN FELDMAN

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Adapted from a paper given at a conference held December 17, 1937 under the auspices of the Bureau of Personnel Administration (Henry C. Metcalf, Director). Printed by permission.

PLUTARCH tells somewhere that in the war between Mark Anthony and Brutus a strange thing occurred in Xanthus, the capital of Lycia, in Asia Minor. Upon the approach of Brutus, the entire population of Xanthus seemed to have acquired a frenzy to commit suicide. For instead of fighting and resisting him, men, women and children stabbed themselves, leaped from high walls, or plunged into the flames of burning houses, so that the invaders, become more friendly by this strange reaction, could not restrain them.

Is something like a strange suicidal mania prevailing in the ranks of labor? This is a time when their combined strength could bring them untold successes, yet instead of fighting for what they should regard a common cause they have of late been fighting each other.

Is this unrest a mere temporary flare which will soon have no meaning, or is the C. I. O. the result of an outbreak of forces which have long been struggling for release? In the effort to answer this question, it is necessary to delve a bit into the background of the labor movement in America and thus to review the conditions which led to the present schism.

Such a short exploration into a seemingly non-practical field may have its value to some practical individuals who see the problem of collective bargaining in too close a focus. When one talks with a business man or personnel director about unions, one usually gets a sordid picture of labor organization as grasping and inflexible, if not vicious, and of leaders as unintelligent, domineering, and petty, if not corrupt. Is that all there is to the picture? Some of these characterizations amount to labor witchcraft; others go to the opposite extreme of exaggerating easily observable and tangible factors at the expense of intangibles. If the labor movement today is sordid, by contrast you will find that for most of its early history it was incorrigibly idealistic. What, if anything, has made for the present phase?

Phases of the Early Labor Movement

A labor movement may be said to have its beginning when workers in different crafts and unions engage in some concerted campaign. In America this is commonly dated back to 1827. What did the workers strive for in those days?

The period of the 1820's and '30's was an era when the average working day in the best factories was about thirteen hours even for women and children; when wages and other basic working conditions were shocking; and when the organization of workers in unions was fragmentary. Yet when the men came together in their early assemblies they were concerned not so much with tangible industrial aims as with social welfare, not so much with the present as with the future. They fought for manhood suffrage, which did not become fully established in the country until almost the middle of the past century; they pressed for legislation abolishing imprisonment for debt; they fought for a public education system untainted by the stigma of pauperism, and they pressed for other social measures benefiting the masses.

In the 40's and 50's, it was an era of theories of social reform, of humanitarian ideals and of eagerly sought panaceas. Some listened readily to socialistic doctrines and fled the cities to establish communistic experiments of their own. Others urged co-operative manufacture to abolish the profit seeker, and co-operative distribution as the seed of preparation for a better world. Some even sought their inspiration in the Gracchi of ancient Rome and vigorously advocated a distribution of the public domain, thus founding the Agrarianism which actually resulted in the Homestead Act of 1862.

The Civil War interrupted labor unionism, but immediately afterward spontaneous agitation from many quarters resulted in a call to a labor convention to lay out new programs for salvation. The National Labor

Union, started in 1866, perhaps entitled to be called the precursor of the A. F. of L., was a sort of front populaire of reform organizations. Repressed desires had an outlet and labor's program remained hitched to the stars. The Union appointed committees on various subjects close to the heart of its delegates, and in its later conventions embarked on agitation for "Greenbackism," a program involving credit extension by the government to producers' co-operatives so that the capitalistic system would be forced back and out. This was accompanied in the producing field by a wave of attempts by coach makers, glass blowers, molders, hatters and others to run their own shops, and in the distribution field by consumers' co-operation from the East Coast to the West.

Even simple economic demands of the time, such as the eight-hour day, were fanatically embraced in the spirit of a social crusade. The shorter day was not merely a matter of individual health and convenience, but a key to "moral, intellectual and social culture," a means of raising standards of living so high that wage demands would totally abolish profits. Incidentally, the fervor of the labor movement showed itself in truculence which has had no counterpart in American labor history until perhaps in these past few years, the militia itself being overwhelmed in some cases and being won over to participate in others.

We may now turn to the organization with which the present C. I. O. is often compared—The Knights of Labor.

Lessons from the Knights of Labor

The Knights of Labor, which originated in 1869 as a small secret organization, came into the open in 1878 with a great preamble for obtaining the blessings of life. It was not to be a mere organization of labor unions but a movement for co-operative production and distribution and for the attainment of a host of idealistic principles, so that the worker might not long remain a wage earner but soon reach the promised land of classless employment. The interests of workers as a class and in mutual defense were to take precedence over differences of craft and status, over religious affiliation and political creed. Its major sentiment, the idea of work solidarity, was expressed in its official motto: "An injury to one is the concern of all." This order captured the imagination of the masses as few movements have, and grew phenomenally, reaching in 1886 a membership of 750,000, an unprecedented showing in the annals of labor history.

Inspiration and fervor alone do not carry a movement indefinitely and the Knights of Labor almost wilted away in competition with a small determined group of unionists who started the A. F. of L. In this connection it is interesting to observe that fifty years ago the A. F. of L. itself was an upstart dual labor movement. Such fulminations of the time as have been preserved show that the Knights of Labor denounced its "treachery" in language which is strikingly similar to that of the A. F. of L. towards the C. I. O.

Then as now it was a conflict not only of objectives but of leadership. The Knights of Labor, rigidly controlled by an inner circle, failed at various strategic moments to make concessions or engage in conciliatory tactics to avoid a labor split and its own ruin. It meant that for almost ten unruly years the two organizations spent most of their energies in fighting each other.

Whatever comfort there is in knowing that there is nothing new or necessarily fatal in labor struggles fades in the prospect of a bitter ten-year war complicated by boycotts if the two sides, better prepared for a long siege than then, fail to come to some agreement. Prosperity today depends not so much on tapping new mines, oil wells, and other natural resources as on applied industry. We are not so young; we are still groggy from years of depression; and we have a deep-felt need of peace.

We must therefore look at the conditions of the time which precipitated the break to see what we may learn from it concerning present day problems. Various misconceptions concerning the causes of the demise of the Knights of Labor need to be cleared away. Perhaps the most pertinent to the C. I. O. question is the notion that industrial unionism made the continuance of the order impossible because skilled and unskilled were organized in the same unions.

The outstanding fact in the failure of the Knights of Labor was not its structure, but its leadership. Its Grand Master, Powderly, has been characterized in retrospect as nothing more than a windbag. The order was not wrong in its general policy to try to organize unskilled workers rather than interest itself alone in the crafts, but it was wrong in the way it tried to do it. Indeed its structure could have been an aid, for it made no rigid requirements and did not issue restricted charters. Its constituent organization contained the widest variety of types of organization, being in the main either of national unions, craft in nature, or district assemblies composed of mixed associations of workers. Like the C. I. O., which is keeping out of

the building trades, the order should have left the crafts alone and, as far as possible, have concentrated its efforts in fields where these had not yet made entry. But its inner leadership became arrogant and foolishly tried to supplant and over-ride the craft organization in fields in which they had their deepest roots.

This started an impetus for separation. The leadership of purely trade unions had become wearied and disgusted by the pursuit of visionary programs that got nowhere. The new unionism of that time accepted the sober fact that the wage system was likely to endure for a long time and that the major function of a union was to obtain tangible advantages here and now. With this objective in mind, its tactics were to wrest concessions in specific trades, rather than for labor as a class, to avoid political activities, and to resist legal control. It saw the best possible entering wedge in organizing the skilled crafts, and it realized the importance of strong intra-union organization, high dues, adequate strike funds and some of the other characteristics of the A. F. of L. union of today.

Two Strands of Labor Agitation

We may pause here to consider the important lesson that two main currents have always played their part in the stream of labor agitation. While the desire for immediate, practical advantages has always had its appeal, the pursuit of broad reformist aims and will-o-the-wisps have had a powerful drive. We must not underestimate this second aspect of unionism. The spectrum of reforms which any workers' assembly brings forth becomes more understandable when we regard labor unions and movements in their deeper phases as compensations for thwarted lives and as outlets for human aspirations. The wage-earner has found his relief in mass organization and in the thrills or illusions of power. A strike, for example, is a psychological as well as an economic phenomenon. If not, why will workers endure immediate loss and prolonged privation for a patently unprofitable objective of a dollar or two a week? A labor organization that concentrates too narrowly on tangible things is almost as lacking in appeal as would be a modern college that concentrated on education.

Inception of the A. F. of L.

And it should be noted here that the founders of the A. F. of L. (which started small in 1886) were not

of the same sober brand as those who control the organization today. Many of its leaders were Socialists who were making a pragmatic attempt to adapt their program to actual American conditions. As compared with the followers of LaSalle, who regarded a union chiefly as a vehicle of worker organization in the political field, Gompers and his associates followed Marx in accepting the strategic necessity of building strong union organization for its immediate yield of power. For example, the carpenters' union, today the most conservatively led organization in the A. F. of L., was founded by one of these early Marxists, P. J. McGuire, who played a prominent part likewise as an organizer and officer of the new Federation.

What happened to make the A. F. of L. of more recent years so contrastingly conservative?

If the early leaders of the A. F. of L. thought that they were simplifying their problem when they limited their efforts to the industrial field, they were soon to learn otherwise. For the furtherance of trade unionism and collective bargaining was, in fact, much more difficult than more general aims. It was easier to start a few co-operatives than to gain a foothold in a hostile industry, simpler to obtain a concession paid for by a general tax-payer, such as the eight-hour day in the Government employment, than a decrease in hours at the expense of a large corporation.

In these attempts to accomplish the preliminaries of the organization of various trades the leaders found themselves harassed from within as well as from without. Their inability to make much headway in the narrow aims made only more violent the attack from those of radical hue who found emancipation only in something that promised abolition of the existing order. Problems of trade union administration absorbed all the energies of the leaders, and socialism became remote. But, being constantly on the defensive, they had to make a virtue of necessity and a fetish out of general principle. To magnify the suitability of a craft form in spite of new conditions was one of these fetishes.

Craft vs. Industrial Structure

The economic era was one of rapid expansion in scale of production and rapid subdivision in substance of individual work. Even craft unions found themselves ousted from industries in which they already had some place, as in steel, and unable to make any headway in the giant new industries, such as automobiles and rubber. Gompers' own craft union, the Cigar Makers,

was withering away before opposition, yet he kept talking in terms of the craft. In the mass production industries the specialized craft groups found themselves engulfed in the larger armies of the semi-skilled and the unskilled.

Industrial unionism, viz: the organization of all the workers of an industry in one union, was by no means the only alternative, nor is it for the A. F. of L. today. Unskilled workers need not be in the *same* union as the skilled workers, if they are in *some* union co-operating with them. That a union may be limited to the unskilled themselves is illustrated by A. F. of L. unions like the hod carriers, the building service employes, and an assortment of unions operating on the railroads. That it could be industrial in structure was illustrated by the Brewers and, of course, the United Mine Workers.

Recent Leadership of the A. F. of L.

If this alternative was available, then it may be asked why was it not used? The answer tells us much about the present as well. One reason is that because of economic self-interest many of the craft unions, looking at the matter closely but perhaps short-sightedly, were not keen on having the unskilled in their industries organized. A craft union facing the competition of a militant union of the unskilled within the same trade might find itself distinctly subordinate in its power and its leaders reduced in influence. And 4,000,000 new C. I. O. members in the A. F. of L., could take control of the Federation.

Yet when this economic reasoning has been given its full weight, it does not explain why the A. F. of L., at the height of the post-war prosperity in 1920, had organized only about 17 per cent of the organizable workers and only a part of the craft workers themselves. The C. I. O. finds the chief cause in the impaired leadership of the A. F. of L. and of the dominant craft unions, in their dampened enthusiasm, diminished vigor, and inferior ability to undertake the campaigning required under new conditions.

There is an age-old problem of leadership in mass movements. As leaders grow in power and prestige, they are in danger of losing touch. Administrative routine tends to confine them to practical tasks; struggles with radicals and visionaries tend to make them increasingly impatient with programs and reform; intra-organization opposition makes them increasingly inclined to dictatorial power. More important, middle age or senility may begin to set in, with its dangers to

those who do not keep alert, so that they become mentally musclebound, inert, obstructing the way to new methods, incapable of sensing or bowing to a new pressure or to intra-organization tension.

For many years there has been a widespread complaint against the A. F. of L. leadership. As an illustration, an article in *Fortune*, in December 1933, described the Federation as suffering from "pernicious anaemia, sociological myopia, a hardening of the arteries for many years," and as dominated too often by people who had fought their fight and grown old or had become bosses, politicians and collectors of dues, with not a small sprinkling of out-and-out racketeers. Jurisdictional disputes pestered labor and industry; abuses of trust were dealt with mildly, if not taken lying down.

Yet all this might have been condoned if not for the biggest mistake of the A. F. of L., the fact that it left so large a mass of American labor, notably the unskilled, locked outside its doors. For a significant change had taken place in those who constituted this outside group. No longer were they to be regarded as illiterate "hunkies" who might be scorned. Immigration had long since ceased; the mass of foreign-born workers were now citizens of long standing; the adults were often veterans of the World War; the new generation were people who had had a much higher level of schooling and who nevertheless were finding places in the ranks of the unskilled. The Negroes, too, who are barred by constitution or by practice in many craft unions, are a more educated, race-conscious and class-conscious lot. The depression created a terrific undercurrent among the masses of the people in this country.

It was at this juncture that the ultra-conservative ideas and policies of the dominant A. F. of L. leaders proved most inopportune. President Gompers more than thirty years before had taken an attitude toward government action which had its basis in the conditions as he had observed them toward the end of the past century, when perhaps they were applicable. They did not suit the feelings of the rank and file in 1935, nor the conditions of the depression. Just as the A. F. of L. hierarchy had once opposed workmen's compensation, had not endorsed state old age pensions until about ten years ago or unemployment insurance until late in 1932, its policies on relief and on form of union organization lagged behind the popular feeling and laid the basis for mass unrest and spontaneous rank and file uprisings. Immense tides of popular fervor were spilling over in Upton Sinclair's E. P. I. C., as in Father Townsend's get rich quick scheme, Huey Long's "share-the-wealth"

move, Father Coughlin's League and various rabble rousings, but the A. F. of L. leadership got none of it. They sat tight and would not even budge in the matter of adapting the Federation structure to a more effective union campaign.

Inception of the C. I. O.

The more progressive and vigorous unions pleaded with the chief powers of the Federation to revise their form of organization and their strategy to the new conditions. Why John L. Lewis should be at the van among this group is clear for one reason, if not for others. Coal mines, unlike most other industrial units, are owned not merely by companies interested in the product of that industry but are often owned by steel mills, automobile companies, rubber companies and other industries for their own use. If the steel corporations are bitterly opposed to unionism in steel they must on principle refuse to deal with them in the so-called "captive" mines. Hence such mines were always at the core of the most bitter opposition met with by the United Mine Workers.

I happen to have been one of perhaps a handful of outsiders present when the U. S. Steel captive coal mines case was being argued before the National Labor Board of the N. R. A., in Washington, in December, 1933. Do you remember that quaint and curious decision? The steel presidents, with their counsel, former Governor Nathan L. Miller, stated that the Steel Corporation would sign a contract with John L. Lewis and Philip Murray for the United Mine Workers in their plants if the spelling of the words "united mine workers" was not to contain any capitals. And on this basis exactly the famous captive coal mine case of the year was decided. It signified to Lewis that whatever recognition was given the coal union would be only a stop-gap until circumstances favored its withdrawal.

Seeing the handwriting on the wall, Lewis and others wanted to make haste to organize workers so widely in steel and certain other mass industries that when a recession came they would not be laid flat. The group favoring the new approach tried hard within the organization itself to get the Federation to liberalize its structure. In the 1935 Convention they actually secured enough support to muster a 36 per cent vote for a resolution which, liberally interpreted, made it clear that some steps should be taken toward reasonable modification of Federation structure. It was not long after, on November 10th of that year, that eight unions within

the A. F. of L. established an informal committee to promote labor organization in the mass production industries. Their state of mind may be seen by later assertions contained in the text of the C. I. O. offer to the A. F. of L. in the fall of 1937:

For many years the progressive forces in the A. F. of L. fought desperately to obtain recognition of the basic principles of the C. I. O., and to secure action in order to accomplish organization among the millions of unorganized workers in the country. But the leadership of the A. F. of L. was content to keep labor shackled to decrepit policies and puny in its numbers and strength.

At the A. F. of L. convention in 1935 it was clear that there was absolutely no intention to change the policy. The original leaders of the C. I. O. were compelled to organize the committee and initiate its activities, immediately following such convention, in order to prevent the A. F. of L. leadership from destroying the clear opportunity to organize millions of workers.

Mr. Sidney Hillman was quoted in this connection as saying:

"We found labor going backwards in 1935. We gave the A. F. of L. opportunity to adopt our policies or to experiment with those policies. We offered them \$500,000 and the opportunity to participate in the organization of the steel industry. Their reply was a threat of expulsion."

If the A. F. of L. had been impressed by the fact that the old order would not endure, and had made any mild concession in industries in which it had little to lose, as in steel and automobiles, the forces now constituting the C. I. O. would not have broken off as a separate federation. Instead it took on an air of *lèse majesté*, acted inflexibly and provocatively, making the situation worse and worse by every act it did, almost without exception.

Employers' Part in Forming C. I. O.

There is another point here that some of you may not have thought of, viz, that employers really gave impetus to the C. I. O. If the A. F. of L. could have justified its craft basis by organizing the steel industry, perhaps the C. I. O. would never have got under way. In other words, if the Carnegie-Illinois Steel Corporation had treated the A. F. of L. as it later did the C. I. O. and if the automobile industry had gone half as far as it has in accepting collective bargaining, the C. I. O. movement would have lost a great deal of its *raison d'être*.

Not only the employers, but the Federation itself should have seen the clear indications that the situation would get out of their control. One such clear indication was a result of the N. R. A., wholly accidental, but

which became of prime significance; namely, the holding of elections under government auspices to determine whom the workers really wanted to represent them. This device, intended originally as a means of fighting company unions and providing a way to settle disputes with employers over recognition, proved to be a device by which a rebellious group in a trade could challenge the authority of their own hitherto entrenched union leaders. It meant that any union official who hitherto had controlled his organization as a separate kingdom now could be voted out of office by a direct democratic process under the eyes and with the arm of the United States Government.

Effect of the C. I. O. on the A. F. of L.

By letting the C. I. O. get started, the A. F. of L. opened a Pandora's box and released from control many of the strong individuals now in official positions, and many lesser leaders who had been kept submerged if not silenced by old timers within the dominant organizations. While, just as was true of the I. W. W. two decades ago, the more aggressive tactics of the C. I. O. have made employers open the door to organized labor in the guise of the A. F. of L., the C. I. O. has opened outlets for vague stirrings, desires long suppressed, and outpouring into new programs that give labor a feeling of progress. It has absorbed many young, enthusiastic, and intelligent leaders and some who are merely young or enthusiastic. The new line-up has even found a constructive use for some of the bitter opponents of the A. F. of L. and for the Communists in the process of campaigning. But the C. I. O. has clearly announced its opposition to Communism and proclaimed itself for the institution of private property, and those will be discarded whose temperament does not bow to responsibility and authority.

The new spirit is affecting and will affect the A. F. of L., whether reconciliation is effected or not. For it has built a fire under the old leadership, renewed some spark of militancy and impressed upon them the necessity to change if they are to hold the reins over an awakened mass. Already such dyed-in-the-wool craft organizations as the Electrical Workers, the Carpenters, and the Machinists have been emulating industrial unionism in organizing workers on an industrial basis and making undreamed-of concessions to the unskilled. The strange result will be to make these and other unions hybrid craft industrial groups—the very thing that caused the split.

The present difference between the C. I. O. and the A. F. of L. is primarily one of freshness of approach, vigor of action and enthusiasm for organization. It is only secondarily one of structure. Just as the A. F. of L. is likely to be revived by competition, the C. I. O. is likely to suffer by its absorption in practical problems of organization. Many people will quarrel with the C. I. O. and the A. F. of L. because there is not enough difference between them. It is true that in a purely labor organization program, in technique, there is a contrast, but not on the more difficult economic policies over which they will exercise an influence if not a control.

There is no marked difference between the two groups on, let us say, the thirty-hour week, on restrictive practices, on wage policies in general or on those paid relief and public workers, on the tariff, and on other economic measures. One group is not looking at these things on any broader focus than the other.

Is the C. I. O. Revolutionary?

It is true that, forgetting the unruliness of some of the A. F. of L. unions, there are many who tend to identify the C. I. O. with sinister, if not revolutionary, activities. What the ultimate result of labor strength may be is a matter worth considering, but as a present factor the situation is exaggerated. It is hard to see anything to this picture of John L. Lewis as a leader of the Red Terror. He has been a life-long Republican and voted that ticket in 1932, if not later.

Trade Union Responsibility

Much of the unsettlement and irresponsibility of the C. I. O. is regarded today chiefly as a temporary and transitional problem. Who can expect a new auto union at once to show the stability and discipline of a long standing institution like, let us say, the Railroad Brotherhoods, or the Amalgamated Clothing Workers? On December 6, the vice president of an independent steel company assailed the C. I. O. by saying:

The C. I. O. has another problem which it must solve. Negotiations with the employer cannot be carried on by hot-tempered, inexperienced men who have reached their position largely because they talk loud, long and fluently in union organization meetings. The union bargainers who meet with the heads of large corporations must be men of experience, knowledge and must have some fundamental sense of business organization, administration and of economics.

You can't train a man like that in a day or two. We estimate

that it takes at least five years to properly train a man in our industrial relations department. We believe it takes equally long to train a union representative so that he can adequately discuss problems with the employer.

The most significant fact that develops from the experience with the new unions in both the A. F. of L. and the C. I. O., but particularly in the latter, is the fact that the men now running for delegates and officers are older, more responsible men who formerly stayed away because they did not like to be mixed up in a scatter-brained activity. That indeed is the most hopeful aspect of the whole problem. For the big question is whether the leadership will be adequate to its responsibility. The hope is that, once relieved of the tension of fighting for their places as an integral part in the administration of industry, the unions will mellow, mature, exercise a constructive function and show greater economic intelligence than attributed to them in the past.

Bases for a C. I. O.—A. F. of L. Reconciliation

There is more reason for concern about the immediate future, for the ill feeling between the two camps continues and is ripping wide open on a large front. The use of boycotts may immeasurably complicate the possibilities of harm to everyone concerned. The basis of a solution requires the instant attention of every force in the community which may have an influence on the situation.

It must be recognized in the first place that to a very large extent the solution is one for the leaders and officers to work out, and that any reasonable formula will be found acceptable, or can be made so, to the workers. Fifteen or twenty people could probably effect a reconciliation. The difficulty lies chiefly in getting these leaders to overcome pride, obstinacy, personal interest and other human obstacles, and to get them to think more of the labor movement which they are supposed to be serving than of their own narrower preferences and interests.

The C. I. O. must be reasonable in its demands but, in particular, the A. F. of L. leaders must accept the fact that they cannot remain the heads of a single established church. They must bow to the new heresies so deeply rooted in fanatical groups which have made a place for themselves. They must be willing to modify their structure in certain mass production industries and to admit to other unions large numbers of the unskilled who may, some day, change the balance of power in the A. F. of L. This is a large order, but if the labor move-

ment is to be a democratic movement it must be willing to recognize the new extension of the franchise.

The A. F. of L. met this situation in an outstanding case. The men's clothing industry was organized and dominated with rigid policies by the United Garment Workers. In 1913 Sidney Hillman led a revolt in the Hart, Schaffner and Marx plant, and in time almost all the organized men's clothing plants were under the control of the Amalgamated Clothing Workers which he started. The A. F. of L. would not officially recognize that fact until 1933. Under the pressure of the N. R. A. and other influences, the A. F. of L. finally readmitted the Amalgamated Clothing Workers to have jurisdiction over the part of the industry it already controlled. The Amalgamated promised not to interfere in the area controlled by the United Garment Workers. In that case the two sides effected a conciliation and provided a pattern for future adjustments.

If established officers refuse to give up their prerogatives, outside pressure must be exerted upon them to find a basis of reconciliation, rather than expose the economic system and the public to the results of their intransigence. It would wear us out watching the two try to wear each other down. This is a case where President Roosevelt might put to fullest use his voice, his personality and his force in aiding the two sides to get together and to abide by the results of elections and other impartial criteria of workers' preferences.

Dilemma of Industry

In the meantime the employer caught between the two is beset by complex choices. It is not only that he must deal with a union but he must know with which union to deal. The employer is very much in the position that many a politician in New York has been in the past few years, viz: wondering whether to stay along with the old, established institution of Tammany, to play ball with Farley, or to shout huzzas with Fusion. The mistake made by those who picked Tammany gives a lesson. The employer must try to avoid tying up with a group that is going out of power, and thus have the distrust and animosity of the new group that may be coming into power. The employer who wants to conduct his business in both an efficient and a social-minded way during this confusing period will find that local issues may be national frontiers of the two rival federations. The two must work out a peaceful solution, or must be made to do so, before local peace is possible.

Job Evaluation

By L. J. KING

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Paper presented at a meeting of the Boston Chapter, January 27, 1938

"SAY, boss, I want a raise."

How often has every Foreman and Plant Manager heard this remark? Certainly more times than he cares to recall. And how does he usually act upon this request? There probably follows a conversation similar to this:

"Why, Joe? Don't you think you're getting all that your job is worth?"

"No, I don't. John Smith gets more than I do and I work twice as hard as he does."

"Yes, you do work harder than John does, but remember that it took John three years to learn his job and anyone can learn yours in a year."

"Yea, but he doesn't work in a hot, dusty cellar. It's hot as blazes down there in the summer. Besides, I swing a sledge most of the time and Smith just sits."

"We don't pay Smith to swing a sledge. We pay him to be on the job and to pull the right switches whenever it is necessary. Anyone down there who didn't know that job could shut the whole plant down in a couple of minutes."

And so on. Maybe Joe's request will be granted. And maybe it will not be granted. But in either event, how sure can the Foreman be that he has been fair to Joe, to Smith, to the other men in the mill, and to the management? Upon what definite premises can he justify the correctness of Smith's rate? What assurance has he had Smith will not be in to see him the next day, or even sooner to insist upon a raise, comparable to Joe's, assuming that Joe's has been granted? Or that some other worker, of whom he has, for the moment forgotten, will not insist upon equity with Joe?

And if he makes no wage adjustments at all, can he send Joe back to work, permanently convinced that his rate is correct and equitable, or will he send Joe back to work a disgruntled and discouraged worker? Or, instead, will he be forced to persuade Joe by clever argument that his rate is correct and watch Joe thus return to work satisfied for only an hour, or a day?

Any of these conditions may result, and it is most vital that an answer be given to Joe which satisfies not only Joe but also both his fellow employes and the management. What can the Foreman turn to to guide his decision? Is there anything more concrete and convincing than merely precedent and rate history? Perhaps if he has worked on both of the jobs before acquiring his present position, he may be able to compare them accurately. But how can he compare jobs on which he has not worked? Or how can he compare the rates paid in his department with those paid in other departments?

Let us ask two Foremen to compare the jobs of Carpenter and Patternmaker. Approaching the first one, he tells us, "A Patternmaker has more skill than a Carpenter, so he should get more money." On the other hand, the second Foreman might say, "A Patternmaker has a good deal more skill than a Carpenter, but a Carpenter spends considerable time out of doors in the winter; also, he works above the ground occasionally. I think this element of unpleasant weather and this element of hazard almost outweigh the skill differential. I believe they should both receive the same amount of money."

It is almost universally true that different men are apt to consider different aspects of the same jobs when establishing rates, and though, in the end, their results may be reasonably close, yet there must be some way to reconcile their differences and establish some mutual basis for accord.

Can something be done about this? Can some method be set up which can stand the withering test of being satisfactory to both employes and to management?

Let us, for the moment, glance back to the two conversations we have just witnessed, the first between a Foreman and one of his workmen; the second, between Foremen and ourselves. We are struck by the mention of factors upon which these men seem to base their opinions when establishing rates. We heard them mention:

How hard a man works, or physical effort;
Heat and dust, or surroundings;
Likelihood of stopping production, or responsibility for continuance of service;
Likelihood of personal injury, or hazard;
Experience and skill.

From this, it appears that there are definite factors upon which compensation is based. Perhaps all such factors might be enumerated, each factor given some relative value, and upon this a scientific method of constructing rates developed.

If the entire economic and industrial picture remained unchanged over a period of many years, all of the tendencies toward a correct base rate for each job would have sufficient time to effect themselves. However, a few examples will illustrate some of the ways in which the picture is continually in a state of flux.

First, consider technological development. In the wire industry, some years ago, a Wire Drawer filled a highly skilled job. He determined the number of drafts which he would make to reduce the rod to the correct diameter; he set his own dies, reaming and scraping them as he saw fit. Further, he expended a great amount of physical effort in handling bundles of wire, two hundred pounds and more in weight, lifting them waist high and placing them on reels and buggies. Today the dies are completely made by Die Makers; the drafting is determined by standard practice; and hoists are used throughout to handle the bundles. The skill he had yesterday has been transferred to the Die Maker; the physical effort, to the hoist. So if skill and physical effort are significant in determining the wage rate, certainly a Wire Drawer is worth relatively less today than he was thirty years ago. This is, no doubt, but one of thousands of such instances in industry. Counteracting this tendency, there are probably many jobs where these factors have increased, particularly that of skill, and the job of today is of considerably more worth than that same job of yesterday.

Secondly, consider the usual method of comparing only two jobs at a time when settling wage disputes. The factors of each job are weighed only against those of the other job. The hundreds of different jobs in the mill are neglected until these two have been compared. Here is an example where, if time permitted, it is likely that in the end, every job would have to be compared with every other job. But many years would elapse before all this cross checking would come about naturally, and with all of the jobs, or at least a great

number of them, constantly undergoing gradual technical changes, it is impossible. A fair wage must be set by comparison of all the jobs at a given time, and then as changes occur, the rates should be made to change in accordance.

Then, thirdly, how likely is it that all of the factors which affect the value of a job would be considered when such comparisons occur naturally? We heard two conversations and in each of them, only two or three factors were considered.

Some other considerations which affect rates in a manner not conducive to equilibrium are:

(1) The number of persons performing the job. Those jobs which include large numbers of workers invariably receive more attention than those which include only two or three workers, and consequently are more likely to be paid nearer their real value.

(2) The value of the job on the open market. Many jobs exist only in single industries, and it is impossible to determine a market rate for them. Those jobs involving Machinists, Carpenters, and other tradesmen, and so forth, exist in an open market and their services are paid for with respect to open competition.

Considering these factors, and there are many more, the problem of setting rates accurately appears as one in which, certainly, some guiding principles should be laid down and followed, and the basis of payment clearly understood by man and management. Above all, the rates should be equitable and fair to both.

We have seen that it is most unlikely that rates will naturally adjust themselves. We have noted some factors which are discussed when rates are being determined. Has any use been made of these factors and what has been accomplished?

The earliest attempts, with which I am familiar, occurred immediately after the war. It was at that time that some men, among them a group at the American Steel & Wire plants in Worcester, listed those factors which they deemed significant in the determination of rates, just as we listed several factors earlier in this talk; evaluated all of their jobs on the basis of these factors, and set their rates accordingly. There were other groups at that time which followed a different policy. They completely described all of their jobs, then by comparison, considering mentally those factors which they thought significant, listed their jobs in what appeared to be the order of their worth.

During the next decade and a half, the principles which these groups laid down became the guides which others were to take up and develop still further. Devel-

opment during the twenties was not rapid. However, with the depression, maladjustment became once more the rule rather than the exception, and job analysis this time, building upon the experience which had been slowly accumulating during the twenties, came strongly to the front, and today, may be found in some form or other in most companies.

There are two fundamental types of plans for evaluating jobs in use today in industry, namely:

(1) Job Grading or Job Ranking System. This plan is based upon the use of a complete job analysis and a comparison by discussion and consultation.

(2) Point System of Evaluation. This plan is based upon the use of a complete job analysis covering definite factors of the job and determining their relative value through the assignment of points.

It is not the purpose of this address to enter into a controversy regarding the relative merits of these two plans. However, it may be significant that I do not know of a single instance where either plan was discarded after once being put into effect.

The plan for evaluating jobs in the Subsidiary Companies of the United States Steel Corporation is based upon the point system. I shall endeavor to outline here the principles of the plan and explain its value.

The plan is for the purpose of evaluating jobs up to, but not including, Foremen, and does not include clerical labor.

The fundamentals of our Job Evaluation plan are:

- (1) Factors that make up the job.
- (2) Relative weight of each factor to the other factors as expressed in points.
- (3) Relative value of the job as a whole as compared with other jobs expressed in total points.
- (4) Translation of the points into monetary rates.

After consultation and discussion with Managers, Foremen, Engineers and others, and a critical analysis of most of the existing evaluation plans, a list of factors was made which was believed to be complete and comprehensive. This list is meant to contain all factors which in any way are likely to affect the wages proposed for a particular job.

This plan had to be made to determine rates for a wide range of jobs such as those in cable works, rubber processing, zinc smelting and refining, cement processing and manufacture, by-product coke distilleries, mining operations, as well as steel manufacturing.

Primarily there are four factors, namely: responsi-

bility, skill, effort, and working conditions. Each factor is broken down into elements in the same manner as when making a time study of an operation. For example, when we speak of skill we must consider: time required to acquire the skill, degree of accuracy, ability to plan, ability to use tools, ability to perform complex manipulations in rapid order.

As another example to illustrate further the breaking down of the factor, let us take effort. This factor may be broken down into physical effort, mental effort and fatigue resulting from physical or mental effort, or both.

Having listed the factors, a maximum number of points is assigned to each factor as a whole and to the elements making up each factor. The sum total of the maximum number of points assigned equals 1000. The maximum number of points assigned to each factor expresses in our opinion the relative value of each of those factors compared to the other factors. For example, we would expect to pay more for responsibility than for working conditions, which is reflected in the assignment of a maximum of 240 points and 100 points respectively.

The chart shows the job factors and the maximum number of points assigned.

CHART NO. 1

Responsibility	240 points
Safety of Others	50 points
Supervision of Others	50
Processing and Processed Materials	90
Machinery and Equipment....	50
Skill, Dexterity and Accuracy	230
Skill	100
Dexterity	50
Accuracy	80
Effort	210
Mental	100
Physical	60
Fatigue	50
Education	100
Experience and Training	120
Working Conditions	100
Surroundings	40
Hazard	50
Connected Expense	10
Total	1000 points

It is significant that if a considerable number of supervisors are presented with a list, similar to this one,

and each factor is clearly explained to them, they will on the average allocate points surprisingly in accord.

It is interesting to note that the other plans of evaluation now in effect do not differ, except in trivial respects, from the factors or the ratios listed. This may not be apparent at first sight to you who are familiar with the various plans, but when an analysis of definitions is made, we find that the only real difference is in the way the various factors are defined.

Since each of the factors which has been mentioned is also a complex factor, as was indicated earlier that the terms Skill and Effort were complex factors, therefore all of these factors must be resolved into their components, if uniform evaluations, considering all aspects of each job, are to be obtained. For example, the first factor, Responsibility for the Safety of Others, has been set up in the following manner:

Definition:

The safety responsibility of a job is for the exercise of care to avoid or prevent injuries to fellow employees.

Discussion:

The rating for this factor is based upon the likelihood of injuring others, and the probable seriousness of the resulting accident.

The type of operation performed and the average number of employees simultaneously exposed to the resulting hazard are considered to determine the likelihood of an accident. Perhaps this may be clarified by an example:

If I am sitting alone in a room, hammering a nail into a table, it is possible that I may lose control of the hammer. However, no one, other than myself, could be injured. If, however, one workman is standing near me, it is likely that he may be injured. Further, if two workers are standing near me, the likelihood that the hammer will hit one of them is increased, and so on, as the number of adjacent men increases.

It is also important that injuries considered under this factor must result from a direct act of the workman. That is, we must first definitely limit the responsibility of the workman. Then, when we have determined these limits, we evaluate the job within them. In this manner, men are not held responsible for accidents which they have neither the power to foresee, nor the ability to control.

Guide charts have been established as bench marks to aid in the determination of the rating for this.

GUIDE CHART I-A-1

LIKELIHOOD OF INJURY TO OTHERS

Characteristics of the Occupation under Consideration	Average Number of Men Exposed Simultaneously				
	1	2	3	4 & Over	
Working with hand tools, handling material manually, or controlling the processing of material manually	1	3	5	8	
Working with power driven machine tools, power driven hand tools, burning, welding, or heating equipment. Warning others of dangerous conditions	3	5	8	12	
Working with tools or handling materials manually from a position above other men. Crane hooking	5	8	12	16	
Controlling the passage of material through equipment or using equipment to process materials not in a fixed position. Controlling Boiler House or Sub. Station operations	8	12	16	20	
Moving or transporting materials or supplies with power driven equipment	12	16	20	25	
Working under explosive conditions or with highly inflammable materials. Moving or controlling the flow of molten metals	16	20	25	30	

PROBABLE SERIOUSNESS OF INJURY

Type of Personal Injury	Points
Slight cuts or bruises	2
Injury requiring a layoff of 1 week or less ..	6
Injury requiring a layoff of over 1 week ..	12
Total and permanent disability	20

The order in which these elements have been arranged is based upon what we believe to be sound theory, and in application they have proved to be sound practice.

Each of these groups is an entity in itself, and though, in the last analysis, it might appear that they are variations of the words, some, little, moderate, and so forth, this is not the case. Each group defines a certain condition, which separates it both from the group above it and below it.

The words, some, little, moderate, etc., define nothing but general terms which have quite different meanings when applied by different individuals. Inasmuch as an evaluation must mean the same to anyone working with it, it is essential that it be as completely objective as possible. The less individual interplay in the system,

the more satisfactory will be the results. And if a system is set up which is believed to be fundamentally correct, variations of the system by individuals working with it do it nothing but harm.

It is for this reason that we have set up definite groups, within each element, and believe that the actual points assigned each job should be those assigned the group. This elimination of interpolation makes for a more lucid and satisfactory evaluation than is otherwise possible.

You may question the points assigned in the table. In justification of them, it may only be said that they appear reasonable, and practice has indicated that they are relatively satisfactory. It may be argued in their favor that even if all of them were altered by two or three points from what we have assigned, the net result would not be significantly different from that now obtained.

One more question may trouble you. You may be inclined toward the view that an evaluation system so precisely defined becomes bulky and unwieldy in practice. As for unwieldiness, it may be said that it is perhaps a more detailed method than many other systems, but its detail attracts the worker in case of negotiation to believe that it is giving him every consideration possible, which is true. In more cursory systems, where many of the details are omitted, the worker may not be convinced and feel that only the broadest aspects of his job are considered, whereas it is the entire job with all its many details that is important to him.

Nothing is so conducive to a better evaluation of each of the elements as the elimination of the consideration of the total worth of that job. Only if the whole job is completely forgotten and thought is given to one factor at a time will it be likely true. If, on the other hand, the picture of the total worth of the job is kept constantly in mind, then highly paid jobs are likely to be forced into the upper brackets of each element and low paid jobs into the lower brackets. When this is done, an entirely biased and incorrect picture is presented which does nothing more than justify all of the rates now in effect.

Each of the factors which is considered has been analyzed as completely as Safety of Others, and for each one a table has been made, to guide the persons making the evaluation. I will not go into all of the details of the various tables, but rather let this one table suffice as an indication of the method.

The next question you may ask is, "Where do you get

sufficient information about each job to produce an evaluation such as this?" Perhaps I have hitched the cart before the horse, but I believe it justified in this case. By discussing the method of evaluation first, I believe that you are able to realize more fully the type of description of each job which is required. It is this description which is obtained to provide the basis for the evaluation.

These descriptions are obtained from the Foremen, Assistant Foremen, and others intimately acquainted with the job. They include not only the duties which the workmen perform, but also the manner in which these duties are performed. They include also the type and quantity of materials worked upon, the machinery and equipment used in the performance of the tasks, and all of the other significant details which go to make up a complete and unambiguous description of the exact manner in which the task is done. With descriptions as complete as this, it becomes a relatively simple matter to compare and evaluate jobs.

This description is of further use, and indeed, is an absolute necessity, if the evaluation of a job is intended to remain in force for any length of time at all. Details change in jobs, and ten or twenty years hence, it may be necessary to reconsider a job evaluated today. It will, at that time, be impossible to know how today's evaluations were reached unless sufficient information is provided for each job to tell this specifically. The description is the basis of a job specification to be used by the Personnel Department in hiring and training men.

When we discuss evaluating jobs, we realize that a job does not really exist unless it is filled by a worker. But many and varied are the types of workmen which we find performing any single job. Which of these men are we to choose, if any?

We must realize that to evaluate a job is to determine the base rate for that job. To whom do we pay the base rate? The base rate is paid to the average man. We should realize and consider the skill, production, supervision and other factors of this average man filling the job and doing a fair day's work.

In this manner, we are really not considering any individual on the job at all, but rather a hypothetical average man. But, when you stop to consider it, do we have, in reality many men who are worth just exactly the base rate paid the job? Yet we do have base rates. And I do not believe it at all inconsistent to set these base rates upon just such a standard as I have brought

out. For after all, it is only in this way that we can dissociate the individual from the job, and it is essential that this be done if the evaluation is to be of any worth. Individuals should be graded or rated, but on quite a different basis. Individual Rating is another subject in itself and has no place in the present discussion.

Let us assume that we evaluated a group of jobs in points. We are now ready to determine occupational base rates.

We have established a principle of determining the worth, relative to one another in a common unit, namely, points, of all the jobs which we have considered.

Let us illustrate the procedure with a hypothetical company employing six employees on a day work basis with a total hourly payroll of \$5.20. Assume that each employee fills a separate job and that the jobs in question do not exist outside of this company, except one, which we will call a machinist. On this basis, the machinist is the only job for which there is a prevailing rate locally. The problem then resolves itself into determining a method of equitably distributing the \$5.20 per hour, or the problem may be stated generally as determining a more equitable distribution of pay for this company, regardless of the cost. Either statement of the problem may occur.

The principles used in solving either problem hold as true in a company having six occupations as in one having five thousand occupations.

Let us assume that the evaluated points are as follows:

	Point Rating	Present Occupational Rate per Hour
Job A	210	\$.68
Job B (Machinist) ..	600	.90
Job C	460	.84
Job D	460	.72
Job E	750	1.02
Job F	850	1.04

Total per Hour \$5.20

The first thing we notice when we look at this table is that Jobs C and D, with the same point values, are paid different rates. We also suspect that 2 cents per hour is an insufficient differential between Jobs E and F.

If we plot these on a graph we see these differences more clearly. The resultant points are somewhat scattered, of course, but an average curve can be drawn through them. Then, if we draw the correct pay from the curve, we obtain the following result:

	Point Rating	Corrected Occupational Rate per Hour
Job A	210	\$.68
Job B (Machinist) ..	600	.90
Job C	460	.78
Job D	460	.78
Job E	750	.99
Job F	850	1.07

Total per Hour \$5.20

In this case you will notice that the total payroll has been unaffected, but that it has been more equitably adjusted.

The method illustrated is but one method of adjusting rates. If three men had been engaged on Job A the question might have arisen. "Is Job A to be given three times the weight of the other points, and if so, how is this to be done?"

We believe the soundest method of drawing the curves under more complex situations would be to allow each job the weight of one irrespective of the number of the men performing it and drawing an average curve through the points, preferably using the method of least squares.

We must at all times remember that a plan of Job Evaluation is not effected to save money in actual wages. Its prime function is to fix occupational rates so that they are relatively equitable and just.

The shape that this curve should assume is problematical. There are those who argue for a straight line, and others who argue for any shape which it may naturally take.

A straight line, with a unit value per point, perhaps would be the ideal to be looked toward, but it is doubtful if it can be actually obtained.

I have tried to present here a brief summary of the reasons for a plan of job evaluation in industry, and to follow this with a discussion of the plan of the Subsidiary Companies of the United States Steel Corporation which embodies the features of most of the other plans now in use. I have tried to illustrate some of the difficulties encountered in formulating such a plan. This I followed with a brief description of the plan and the method of determining rate structures. There is, I believe, still a great amount of material in job evaluation which lies untouched. No doubt, the next few years will bring this out, but I believe that our plan is fundamentally sound.

How the Employer Can Reduce Unemployment Taxes

By EUGENE J. BENGE

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Paper presented at a meeting of the Cleveland Chapter, January 18, 1938

Provisions of State Unemployment Insurance Laws

WHEN the Federal Social Security Act was passed August 14, 1935, it virtually served as a mandate to each state to pass an unemployment insurance law which would be acceptable to federal authorities. This compulsion was achieved by exercise of federal taxing power.

Today each state of the union has an unemployment insurance law. The provisions of these laws are, in the main, similar. They provide for taxing an employer based on his payroll, for the accumulation of funds so collected, and for the payment of benefits to eligible unemployed persons. The amount and duration of benefits are stipulated.

Merit Rating

There is one feature in most state laws which has particular significance. It is known as "Merit Rating" and it might be the dynamite which will blast you out of business. In the unemployment laws of ten states the merit rating provision has not been included, yet it seems fairly certain that merit rating will be applied even though it is not stipulated in the law.

There is nothing mysterious about merit rating. It means that the funds credited to your account as an employer will be debited with withdrawals for benefits paid to your former employees. If your labor turnover is high, the withdrawals from your account may be large, resulting in an increase in your tax rate. If the labor turnover of your competitor is low, the withdrawals from his account, and hence his tax rate, may be correspondingly low. In Ohio, for example, merit rating will mean that beginning in 1942 an employer may pay 1 percent tax, if he has had low labor turnover, or as much as 4 percent if he has had high labor turnover.

Labor Turnover

Labor turnover has long since been recognized as a severe organization drain. Even with lowest grades of help, statistics have shown that the cost per man replaced may be \$50.00. With salesmen, foremen, chief clerks and technicians, the cost may be \$1,000 or more. Hence, we see that labor turnover is costly to the employer on its own account. However, in the future, it will also be costly by virtue of the higher payroll taxes which it will cause. It is not inconceivable that high labor turnover will tip the profit scales from black to red, because of the ineffectiveness of new personnel and higher payroll taxes.

You dare not wait until 1942 to stabilize employment because merit rating will be based upon your experience prior to 1942. You as an employer are now determining the amount of your tax in 1942 and thereafter.

Sliding Tax Scale

Let us see how some of these costs will work out. Again taking the Ohio law as a basis, we find that in 1942 a sliding scale of tax, based on the percentage of reserve to the average annual payroll, goes into effect. This schedule is as follows:

<i>Percent Reserve</i>	<i>Percent Tax To be Paid</i>
15	1
12	1½
10	2
8	2½
Less than 8	3
0	4

If at the beginning of 1942 you have built up a reserve which equals 15 percent of your average annual payroll, you will pay only 1 percent in tax.

Practical Example

For purposes of simplicity, let us assume that you have 100 employees who receive an annual payroll of \$100,000. Let us further assume that in the years 1939-40-41 when benefits will be payable in Ohio, only three employees draw benefits aggregating \$500 each year. This would allow benefits of about \$167 per employee. The figures for the period 1936-41 would then be as shown below.

Year	Tax %	Tax Amount	Benefits	Reserve
1936.....	.9	900.	None	900.
1937.....	1.8	1800.	None	1800.
1938.....	2.7	2700.	None	2700.
1939.....	2.7	2700.	500	2200.
1940.....	2.7	2700.	500	2200.
1941.....	2.7	2700.	500	2200.
				\$12,000.

Since this reserve would equal 12 percent of the average annual payroll, the subsequent tax would be reduced to 1½ percent and in the following three years a 15 percent reserve could be built up as illustrated below:

Year	Tax %	Tax Amount	Benefits	Reserve
1942.....	1.5	1500	500	1000
1943.....	1.5	1500	500	1000
1944.....	1.5	1500	500	1000
				\$15,000

The \$15,000, representing 15 percent reserve, would further reduce the rate to 1 percent thereafter. However, it is unlikely that a concern employing 100 people would, in a year, have such a low labor turnover that only three employees would draw benefits. The condition may be described as the allowable minimum to achieve the lowest tax rate. At the other extreme, if benefits have to be paid to twenty-seven employees per annum, the reserve would be wiped out by the end of 1941, which means that the 4 percent rate would apply thereafter.

To summarize, if you as an employer with a payroll of \$100,000 per year release only three men per year who draw benefits, you will pay the lowest tax rate—\$1,000; if you have twenty-seven men who draw benefits each year, you will pay the highest tax rate—\$4,000.

The above figures are computed on the basis of the Ohio law and must necessarily be modified for other states. However, the principles of computation are

largely applicable wherever the merit rating system applies.

How Can You Reduce the Tax?

There are four main avenues through which reduction in unemployment tax can be effected. These are:

1. Manufacturing.
2. Marketing.
3. Personnel.
4. Management.

Some of the devices listed below are already well known to employers who have attempted to iron out the seasonal inequalities of production or sales. Others have had their roots in the unemployment laws themselves and hence may not be so familiar. It is not probable that any one employer can utilize all the suggestions given but he can at least appraise his present plans in the light of the proposals here set forth. Nor is it felt that the suggestions given in this paper exhaust the possibilities.

Manufacturing

Under the general heading of scheduling production come a number of methods, some of which have been in force with many employers. *Semi-processing*, that is, the processing of raw materials up to the final stage of manufacture, can sometimes be done in off seasons. So too, *manufacturing the finished goods to stock*, that is, holding them in warehouses until the selling season arrives, is another method frequently used. Both of these devices tie up money which might otherwise be kept in liquid form and each employer must decide for himself as to whether the loss or risk from frozen capital justifies the benefits to be gained. *Simplification* of the line is another device which helps in production scheduling. Where products are varied, the task of smooth scheduling is very complex. Where they are few, it becomes possible to standardize parts, manufacturing processes, shop equipment, handling, packaging, etc.

Integration of the sales and manufacturing budgets currently will help to eliminate those peaks of manufacturing which in the future will prove so costly. Large employers will probably find that a research staff will be necessary to accomplish this continual integration of sales and manufacturing budgets; to effect simplification and standardization; and to determine to what degree semi-processing and manufacturing to stock are justified.

Management will find itself forced to make new per-

sonnel policies. It will have to study the limitations of working hours permissible under certain laws, since some states are now prescribing maximum hours per week. Moreover state unemployment insurance laws often permit a reduction of earnings through *reduced working hours* before unemployment benefits are payable. In such states, it will pay you to keep the number of workers in your plant constant and to vary the hours worked. Such variation can be accomplished by reducing the number of hours per day for an employee, by having him lay off one or more days per week, by limiting overtime, or by having employees take *vacations in the off season*. Even when employee earnings will go so low as to make an employee eligible for partial unemployment benefits, you will generally be better off to reduce working hours of all employees rather than to lay off some employees entirely. By so doing, you will keep a lien on regular employees even though only for one or two days per week. Moreover, some employees will not apply for partial unemployment benefits (the difference between actual earnings and what they would be entitled to under full unemployment benefits) and to that extent will not deplete the funds credited to your account.

Marketing

The problem of *increasing off season demands* for company products has many angles. Increasing the kind and amount of advertising is one obvious way. Sometimes such advertising can point out new uses of the product; or quote lower prices to consumers during the off season; or offer premiums.

Contests, with awards to dealers and employees, will frequently stimulate off season demand. Then there are special inducements which can be given to dealers and jobbers, such as discounts for advance buying, contract guarantee against price drop, deferred billing, longer credit terms, higher credit limits, the privilege of returning excess merchandise and the practice of shipping early to use slower but cheaper means of transportation.

To supplement off season advertising and loading dealers' shelves, salesmen should be sent early into territories to correlate and to stimulate the movement of goods from manufacturer to consumer.

Above we have mentioned the desirability of simplifying the line of products. It is not contradictory to state that there are times when it is desirable to *add to the existing line* of products new items which can logically be manufactured and sold in the off seasons.

Such new products should preferably utilize the same or similar materials and processes as used for the present lines, and should be capable of distribution through existing sales channels. Once new lines have been added they should not be discarded quickly for it generally takes several years to make a new line profitable. The training of employees and dealers necessitated by the addition of new lines should be undertaken consciously. That is, shop employees should be carefully trained in the new manufacturing process; sales employees and dealers should be instructed in the sales features of the new items.

Personnel

One of the surest ways to stabilize the working force is to *improve* the quality of *selection*. Prerequisite to selection is the compilation of adequate job analyses, including the setting of employment standards. Also prerequisite is the development of sources of labor supply which will provide men in sufficient number and of adequate ability for the work at hand.

The employment interview itself is a relatively inefficient device, as can readily be demonstrated by having three interviewers interview the same group of men. The amount of disagreement among the interviewers suggests very strongly that the judgment of any one of them is in itself not adequate for selection purposes. There are various devices which can bolster the interviewer's judgment, including physical examination, a properly prepared application blank, careful development of references, two or more interviews and the use of employment tests. Most employers do not realize how valuable employment tests can be to them in making original selections; nor do they realize the ease of administration of such tests. The principal use of employment tests is to reject poorly qualified applicants and so to allow the interviewer to exercise his judgment, sharpened by the other devices mentioned above, upon a group of individuals already partially selected.

It is an old axiom in personnel work that the cost of *training* cannot be avoided. It is either paid once in formal training, or it is paid many times over in customer dissatisfaction, spoiled work, loss of sales opportunities and other trial and error methods. Where the personnel is large enough, group training may be justified. In such group training, the lecture method should be avoided as much as possible. Instead the discussion method for imparting principles or the demonstration method of imparting practice should be developed.

Individual training is a training hand-tailored to the needs of each man, and is useful in salvaging weak employees or in polishing up employees who are being promoted. It requires analyzing the background of the employee and matching his background against the requirements of the work he is to do. Where there appear gaps between the two, specific training is administered to fill in these gaps.

Management should think of training as a continuous process. The information and practices given employees under the original training program may become out of date. Policies change, as do manufacturing or selling processes. Normally a well-trained employee can pick up these modifications as they are made but where sweeping changes have occurred or where an employee is transferred from one distinct type of work to another, training again becomes obligatory. Particularly in manufacturing, entire *re-training* may be necessary as a result of introductions of new machinery, disappearance of old lines, and the addition of new lines.

It is desirable to measure or *rate each employee's productivity* or ability. Such estimates of productiveness are useful in many ways, not the least of which is to indicate either that the employee deserves promotion or that he deserves further training. Otherwise supervisors may say little about employees of high ability for fear of losing them—or will take peremptory action with employees of low productivity before management can determine whether such low productivity results from lack of ability, or from lack of skill or information which should have been implanted by training.

Employees sufficiently flexible to be used on several distinct activities will be found helpful in stabilizing employment. Some concerns have adopted a personnel budget whereby supervisors are required to predict personnel requirements for each season of the year, so as to permit planning the transfer of versatile employees. Other concerns have used a *Flying Squadron* which consists of employees experienced in a number of operations who can be transferred to bottlenecks of production as needed. Some national organizations are even considering transferring experienced employees from northern points to southern points and vice versa with the changing seasons.

To derive benefit from flexible employees, it is almost imperative that there be a *centralized personnel department*. This department should also exercise centralized payroll control otherwise management policies may be ignored by department heads and field supervisors. Such centralization should greatly slow up the hiring

and firing process and this is necessary if unemployment taxes are to be held down.

Management

Management cannot sit back and ask that its supervisors take all the steps necessary to reduce unemployment taxes. There are some things which management and management alone can do. One is to authorize plant *maintenance work in off seasons*. Another is to make available to supervisors adequate *digests of state unemployment laws*, accompanied by directions to supervisors as to what they are to do about those laws. Management should strongly encourage *promotion* of employees *from within* the company, to prevent loss of competent individuals who become disheartened.

Management may wish to change existing sales outlets to the status of *independent sales agents* thereby removing such individuals from the payrolls and hence eliminating the necessity of paying tax on them. Much work can be "farmed out" on contract, particularly work which has to be done during the peak seasons.

The law differentiates between independent contractors and subcontractors. In order to establish the independent contractor status, the employer must show first that the contract itself does not provide to any extent for the reservation of control by the employer over the details of the work, and second, that if the contract contains no such reservation of control, no such control is in fact exercised by the employer. (Ruling of the Industrial Commission of Wisconsin, but substantially the principle which will be applied in all states.) In most states the employer is made responsible for contributions on the wages of employees of subcontractors unless the subcontractor assumes exclusive liability for such contributions under regulations of the administrative authority. Since independent contractors may also be considered as subcontractors, it would seem desirable that all contracts awarded provide for assumption of liability by contractors.

For concerns which have a large increase in personnel during the summer months, it may be possible to *utilize college juniors* for such temporary work. Inasmuch as these men will return to college at the end of the summer, they will not be unemployed.

Management should seek out other industries in the community which have employment peaks different from its own, in the hope of *using employees from another company* in sufficient number to avoid payment of unemployment benefits by either employer. In this con-

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The Foreman's Part in Motion Study

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Paper presented at a meeting of the Detroit Chapter, January 20, 1938

JUST what the final effect will be of changing labor attitudes, governmental policies, and all of the other present-day variables, no one can pretend to say with any degree of accuracy, yet throughout the period of changing conditions, past, present, and expected, one fact stands out with refreshing clearness. The organization which knows how to produce most efficiently is in the best position to cope with whatever occurs.

Therefore, effective operating methods are more important than ever before. Industry is making, and will continue to make, increasingly great efforts to obtain them, and—a fact which is of marked significance—is seeking them through means which only a few years ago were considered to be too theoretical to be of value for practical production work.

The new attitude is well expressed by a statement made almost a year ago by the manufacturing manager of a Detroit company. "The day has passed," he said, "when we can obtain our production increases from the backs of our workers. In the future, they must come from the heads of our supervisors."

This statement in a few words expresses the difference between past and present attitudes. In the past, when greater production was desired from a given machine or set-up, it was commonly sought through increased effort on the part of the workers. Incentives were introduced to induce them to work harder, or a driving type of supervision was exerted to obtain the same end. Where operations were performed on conveyor lines, the speed of the line was sometimes stepped up unreasonably so that the much discussed speed-up resulted.

All of these devices, with the exception of properly applied incentives, were looked upon with disfavor by the workers themselves, and when labor organization arrived, one of the demands most frequently repeated was for the abolition of anything which seemed to encourage or require unusual exertion on the part of the worker. The result was that increased efficiency—which with the high rates which labor demanded and re-

ceived was more important than ever—had to be obtained in another way; a way which was already developed and available, namely, methods study.

Methods study is the technique which seeks production increases by increasing the effectiveness of labor rather than by increasing effort. It devises improved methods which eliminate unnecessary or useless motions. It seeks constantly to reduce effort to a minimum and to make it easy for an operator to produce without interruption or fatigue a steady quantity of uniform quality product.

At first glance there does not seem to be anything new or different about the methods engineering approach to effective production. Most managements feel that their shop organizations are devising new and better methods as part of their regular work—as indeed they often are—and therefore feel that they are already doing all that can be done. This attitude induces a sense of satisfaction, perhaps, but it also leads to stagnation.

The true methods engineering approach is based upon the fundamental and militant principle that with sufficient study any operation can be improved. In all cases, the improvement may not be economically justified, but it is nevertheless possible. During the course of methods study work, lack of success in improving any job is not interpreted to mean that the job cannot be improved, but rather that no way of improving it has yet been discovered.

Once a realization is obtained of the truth of the principle that with sufficient study any operation can be improved, existing operations and methods are viewed in an entirely different light. A plant performing 1000 operations offers 1000 opportunities for improvement. If 5000 operations are performed, 5000 opportunities exist. A direct challenge to the ingenuity and ability of management is offered wherever production work is being done.

To meet this challenge effectively, certain definite steps must be taken. The improvements won't just

happen. Rather, as stated previously, they must come from the heads of the organization's supervisors. One step is to delegate a supervisor or group of supervisors to the task of studying and improving methods. To this end, methods engineers, or motion and time study men, are employed. This is a very necessary step, for technical knowledge and ability are required for certain phases of the work. In spite of the remarkable results obtained in this manner—production increases ranging from 30 to 400 percent or more on individual jobs—this move in itself will not be sufficient to obtain the maximum results. If really effective progress is to be made, instead of a handful of methods engineers doing methods work, every shop supervisor must be a methods man.

As a group, the foremen are the most important shop supervisors. Therefore, the balance of this paper will be devoted to a discussion of the foreman's part in methods engineering or motion study. With a few changes, the same remarks will apply to the other shop supervisors such as tool designers, inspectors, production men, and so on.

In deciding how best to fit the foreman into a methods study program, it must be borne in mind that the foreman cannot and should not be expected to supplant the methods engineer. The foreman has certain very definite duties in connection with getting out production and handling his men which will claim the major portion of his time, and he cannot be expected to make time studies or micro-motion studies or to undertake any of the similar time-consuming and technical procedures so useful to the methods engineer. At the same time, he should know enough about the principles underlying correct working practices to be able to recognize an ineffective method when he sees one. He can correct the more obvious inefficiencies himself and then because he has been taught to recognize the possibilities that lie in detailed motion study will call on the methods engineer for further assistance.

In setting up a training program, it should be the aim to get the foreman to co-operate with the methods engineer because he wants to and to arouse his interest in methods sufficiently to induce him to make at least the simple and obvious improvements. One does not have to be a methods engineer to move a supply of material closer to the operator, thus eliminating three unnecessary steps, but he does have to be sufficiently methods conscious to recognize the steps as being unnecessary and sufficiently interested in making improvements to get the material moved.

These things, simple as they are, are not necessarily spontaneous in the average shop foreman, and a certain amount of training and education are necessary to develop them. Therefore a growing number of firms are turning to a type of foreman training which places its chief emphasis on methods or motion study and are finding that improvements hitherto unrealized are the immediate result. A properly organized and properly followed up training program may be expected to give a minimum increase in overall productive efficiency of 20 percent even where the work has previously been time studied and is on a measured basis, and in many cases the increase is substantially more.

These results do not come overnight but require careful preparation. First, top management must be sufficiently convinced of the desirability of the results to get behind the program with a sustained enthusiasm which must be evident throughout the organization. The average human being is most comfortable when following a prescribed routine among familiar surroundings, and it requires considerable encouragement to induce him voluntarily to change the routine and surroundings and to seek improvement in new and unknown ways. For example, a given method yields fifty pieces per hour of a quality which satisfies the inspector. A new method seems to offer possibilities of one hundred pieces per hour, but before it can be put into effect the operator will have to be retrained. During this period, quality will perhaps suffer. Hence, if the change is made the foreman can expect to be in for an uncomfortable time. The operator will have to be trained, and led, and encouraged, and his wholly normal unfavorable reaction to trying anything new must be overcome. If the quality of the work suffers, the foreman can expect trouble from the inspector and perhaps his own superior. He will have to watch the new method closely during the transition period which means that trouble may arise on other jobs which he is forced to neglect. Whether the foreman analyzes all of the trouble he is likely to get into through a methods change or not, he at least realizes that there will be some difficulties to be worked out, and he will be inclined to go ahead in the face of them only if he knows that when the job is completed he will gain recognition and receive commendation from top management.

The training program itself should be designed to educate the foreman along certain definite lines. It should be presented in a way which will show him the application of the fundamental principles which underlie methods work to his own problems. At the same

time, the program should be educational and not mere entertainment, and it should train him to think for himself.

The first point to be emphasized is the necessity for improved methods. Many shop men are rather confused in their economic thinking, particularly in the face of the experiences of the past depression, and it is necessary to straighten them out at the outset. If a man feels that by devising a methods improvement he is putting a fellow man out of a job, he will be reluctant to put it into effect. If, however, he is shown the long-range improvements that result from improving methods with the increase in living standards, wages, and working conditions which follow, his attitude toward methods work is quite certain to be more constructive.

Next, a receptiveness to new ideas must be induced. Everyone knows the resistance with which most new ideas are greeted in every walk of life. The same resistance is encountered in shop work unless the way is carefully prepared. Some men feel that new suggestions in some way reflect on their own ability, and they immediately take a defensive attitude. They explain at some length why the existing method is necessary and why the new idea won't work. This attitude must be broken down at the outset if the maximum results are to be accomplished.

When the preparatory part of the program has been completed the simpler phases of methods engineering which the foreman can apply himself should be taught. Common sense methods of systematic job analysis, for example, can readily be applied by the foreman. If at first he does nothing more than eliminate every unnecessary step from his department, he will make a major improvement and can then go on to shortening motions, introducing better tools, improving layouts, and so on.

Finally, it must be remembered that the foreman supplies the contact between the production workers and the rest of the organization. In connection with methods engineering, therefore, he should know enough about motion and time study to co-operate intelligently with the methods engineer and to answer any questions about this work that the worker may raise.

When a new method is developed it is usually the foreman who must explain it to his men and teach them to use it. To do this successfully, he must know men and their usual reactions to new things, and he must know methods and the reasons that make one way better than another. After a new method is developed and put into effect, he must follow it up sufficiently to see that

it is not changed or abandoned. All these things, the training program must teach him to do.

After the formal training is completed, interest in methods work must be fostered by a follow up program. The nature of this program will vary under different sets of conditions, but if nothing is done after the training period is over, methods work will soon be set aside in the face of seemingly more pressing duties, and the constant improvement which is desirable and necessary under present-day industrial conditions will not be obtained. Advanced training programs, bonus plans which offer rewards for improvements, and supervisors' meetings at which recent improvements are discussed are some of the things which will keep interest in methods improvement alive.

How long should this continue? Indefinitely. The fundamental principle of the methods engineering approach is that with sufficient study any operation can be improved,—any operation, not just the operations which have not previously been studied. The new method of one man is merely the old method for the next, and with fresh study from a fresh viewpoint, improvement is almost certain to result. Experience has shown that methods can be improved again and again on the same job and that the ultimate is reached only when the labor has been reduced to zero through full automatic machinery or the complete elimination of the operation.

One of the important results of a program such as is outlined above is the discovery of the more progressive men among the supervisory force. Those that are co-operative, possessed of originality and imagination and who take an interest in doing more than just the job at hand stand out during the training program, and the information thus gained is useful for future promotions. Incidentally, it is difficult to predict in advance who the outstanding men will be. Many an older supervisor whose usefulness is considered limited is found to be more receptive to methods engineering training and better able to make practical applications than some of the younger men. Certain individuals find a source of satisfaction in the results which they accomplish through the introduction of new methods. Others lack the necessary imagination or the enthusiasm or both. It is desirable for management to know to which group each supervisor belongs.

In the discussion thus far, the foreman as the chief representative of the supervisory group has been considered. There is another very important group which can never be overlooked in any consideration of methods engineering, namely, the workers themselves. They are

the ones who must use the new methods, and their co-operation in any methods program is essential.

In order to secure this co-operation, the workers must be given an understanding of what methods study is and what it strives to accomplish. Without this explanation, it is likely to be looked upon as the speed-up in another guise. Properly understood, it is found to advocate the things which labor itself wants; good conditions, easy nonfatiguing methods, fair production standards, and the intelligent handling of the training problem.

Where labor is organized, the inclusion of Union representatives in the methods study training program outlined above accomplishes two important results. First, any suspicion that something objectionable to labor is going on is allayed at once. A meeting of supervisors behind closed doors is naturally viewed with suspicion by those who do not know what is transpiring. When they know, the mistrust is overcome. Second, the representatives of labor are given a true picture of methods engineering and because the procedure contains nothing detrimental to the interests of labor, they eventually give it their support. Some of them, in fact, have gone into methods work themselves after receiving the training, feeling that they were advancing the interests of labor by assisting the progress of a procedure which was essentially fair and just.

The best results in any organization are obtained when the entire organization works together for a common end. In connection with methods work, if the methods engineers, supervisors, and workers all desire to have effective working methods, effective methods are certain to result. Training, education, and leadership are necessary to obtain them, but when these are properly given, the results are often remarkable.

As an example, methods study training was given to the foremen and key workers of a plant employing about four hundred people. The initial results which were obtained in the way of improved methods were gratifying to all concerned—all, that is, but the foreman of one department. In spite of the fact that he had made more improvements than anyone else, he was dissatisfied with his progress. His department handled a wide variety of miscellaneous work, and while he

worked on the improvement of one method, he was keenly aware of the fact that numerous ineffective methods were in use all around him. It did not seem possible to him to get all jobs covered because of the variety of the work.

He put his problem before the methods engineer and after discussing it from all angles, it was decided that if quick improvement were to be made, the operators would have to be taught to use effective methods on any job they might do. Accordingly, a motion picture film was made demonstrating the principles of correct working practices. For example, one of the things which the foreman had noticed was that the operators often reached too far for material because they were careless in placing it at the start of the job. To overcome this, under the title of "Short motions are faster than long motions," a comparison was shown of an arm making first a 6" motion and then an 18" motion. This was filmed in slow motion to make the relative time required by the two motions clear. Then a practical application of the principle followed. First, one of the operators was shown reaching for material located at the back of her bench during the course of a packing operation. Then she moved the material closer, and this simple change increased production noticeably.

Similarly, other points were illustrated. The superiority of skill over speed; drop delivery; the hand as an ineffective holding device; methods of eliminating the basic operation of position; and similar points, were demonstrated pictorially. The operators were as interested in the making of the film as anyone and co-operated whole-heartedly.

When the film was completed, it was shown first to the entire department, and then twice accompanied by a talk given by the foreman to the operators in groups of ten. The results were at once apparent. Operators who had been substandard producers soon attained or surpassed standard performance. Worthwhile suggestions for improvement came from the operators in increasing number. The efficiency of the entire department rose substantially. This is just one example of what a foreman can do when he is encouraged and trained to take an active part in methods study.

A Study of Rhythm in Hand Motions

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Object

THE object of this investigation was to evaluate the effect of changing the temporal pattern of therbligs in a given cycle of hand motions taking place in a given period of time, or more specifically, to determine the results of making a regular cycle of hand motions rhythmical without changing the physical aspects of the task.

Rhythm, in the psychological sense as it is used in this study, may be explained as follows: "If without counting, one gives attention to the movements of the body and limbs while dancing, walking rapidly or running, he will readily perceive a fairly recurrent pattern of movements. Similarly the uniform puffs of a locomotive seem naturally to fall into rhythmical groups of two or of four puffs. *Rhythm* is the perception of groups or patterns of successive impressions, the members of which are perceived to be consistently different in some quantitative aspect. . . . With this variation comes subordination and synthesis of the elements into groups."¹

A series of cycles of motions accompanied by a feeling of grouping, that is, perceived as a *series of distinct, separated cycles*, will, in this study, be referred to as *rhythmical work*. The separation may be caused by either a momentary pause or a momentary relaxation of attention.

Rhythm is sometimes interpreted in a second way. It may be understood to mean merely a regular repetition of a series of motions. Thus, the reference is often made to the "rhythm" of turning a crank or of feeding material into a machine. In this study, a smooth, even, unaccented, regular repetition of a cycle of motions unaccompanied by a feeling of grouping will be referred to as *regular work*.

There has been considerable discussion of the merits of rhythmic work over merely regular work. One finds

many references in the literature such as the following:

"Rhythm makes work easier as well as more enjoyable, because each effort is followed by a corresponding rest. The worker is physiologically attuned to rhythm; it is his biological heritage."²

"There is fundamental economy in rhythmical performance in that we get a repetition of the act without necessarily a repetition of the impulse."³

This study was made to obtain information bearing on the following questions:

1. Is the rhythmical method preferred to the merely regular method of doing the same task?
2. Does rhythmical work create less fatigue than merely regular work, (defining fatigue as a reduced capacity for activity resulting from previous activity)?
3. Does rhythmical work make for more automaticity than merely regular work?
4. Is the rhythmical work more efficient than merely regular work in that the worker can produce more work in a given period of time when working rhythmically?

Equipment Used in Making the Study

The situation involved in this experiment consisted of a cycle composed of three *use* therbligs with a *transport loaded* and a *position* therblig between each two.

The actual task consisted of sitting at a table and carrying, with the right hand, an electrode made of a one-sixteenth inch diameter copper rod set in a convenient wooden holder and attached to a very flexible wire, clockwise around a path the shape of a right triangle with sides of 5 inches, 10 inches, and 11.5 inches, and inserting the electrode into the one-quarter inch holes in the thin metal plates at the vertices of the triangle. This path was in the plane of the table top.

The electrode could only be inserted into the holes when a metal plate, covering their underside, was

¹ Boring, E. G., Langfeld, H. S., Weld, H. P. and others, "Psychology, A Factual Textbook," p. 256, John Wiley and Sons, Inc., New York, 1935.

² Watkins, G. S., "Labor Management," p. 551, A. W. Shaw Co., New York, 1928.

³ Burt, H., "Psychology and Industrial Efficiency," p. 121, D. Appleton and Co., New York, 1931.

drawn back, this being done electrically, one hole at a time, to form a definite time pattern of the possible *use* therbligs or insertions. Each successful insertion was recorded on an electrical counter, one for each hole, each connected to the electrode and to a copper plate set three-eighths of an inch below the upper surface of a hole. The time each hole was open was four-tenths of a second, this being somewhat longer than the actual time required to insert the electrode so as to give the operator some leeway to more closely approximate the flexibility of the time pattern of an industrial task. The time between the opening of the successive holes which was the time for the *transport loaded*, or movement, was varied to give the different temporal patterns while the total cycle time remained constant at two seconds. The device to close and open the circuits which were used to open the holes was driven by a synchronous motor to keep all time values constant.

The maximum number of insertions was 30 sets of three holes or 90 insertions per minute which was 2,700 insertions for each of the half-hour work spells of the experiment. With the counters recording the number of insertions made within the intervals allowed for them by the particular time pattern and the count tabulated each minute of the work spell, the number of cycles missed could easily be determined for each minute of work.

The operators were instructed to stop as soon as they missed an insertion and to wait at that hole until the next opportunity to insert the electrode, to then do so, and continue around the path again. Thus each hole missed meant a cycle missed, which would be the case with an industrial operation where the failure to do a part of an operation at the time it is supposed to be done makes it impossible to do the rest of the operation; i.e., a girl filling boxes with a material certainly cannot perform the motions to fill the box which she failed to pick off the conveyor which brings them to and past her, until a box is again available; and similarly, an operator working at a punch press with steel-rule dies cannot push the die forward into the press until she has performed the motions necessary to arrange the material to be punched upon the die.

Procedure

The operators first practised for one-half hour at inserting the electrode into the holes with the holes held open, so that they could gain a feeling of the spacial relationships of the movements involved. They then

rested for fifteen minutes and were afterwards instructed as follows:

"The holes in the Pursuit Board will now be shut. (The pins holding the thin metal plates from covering the undersides of the holes were removed.) The holes will be opened during the run one at a time, one after the other, from this electrical control device. (The control device resting about ten feet away and behind the operator was pointed out to him.) You will try to insert the electrode into the holes when they are open, going from hole to hole, clockwise around the path. You will try to fit your movements as closely as possible into the time pattern suggested by the openings of the holes by inserting the electrode into the holes as soon as possible after they are open. They will open for but a short period each time. You need only to hit or touch the bottom plate, withdraw the electrode and go towards the next hole, touch into that, and continue around. If you try to insert the electrode into a hole before it opens you will merely prevent it from opening. Only the insertions of the electrode made while the hole is open will register on the counters. If you fail to insert the electrode into any hole while it is open, do not move towards the next hole but wait at the hole missed until the next opportunity for insertion is presented to you; then make the insertion and continue around the path. You will try not to let this happen. Do your best to keep up with the pace set. The total time to return to the first hole (the hole at the beginning of the five inch movement which was the horizontal movement parallel to the front of the operator's body) at the instant it opens the second time will be two seconds. (The amount of time allowed for each movement was now given to the operator as a percentage of the time allowed for the five inch movement.) Let's see what you can do!"

The operator then practised for one minute with the holes opening in the time pattern to be worked at. He rested for the next minute, then had a one minute warm-up period followed without any pause by the thirty minute work spell for which data were recorded.

The admonition, "Let's see what you can do" was always spoken to the operator after the time pattern was explained and this part of the procedure plus one minute of practice, one minute of rest, and a one minute warm up followed immediately by the thirty minute work spell was the standard procedure for all runs after the first.

The operators worked for nine one-half hour work spells, one work spell to a day, usually three a week, all

at as near the same time of day as was possible and no tests were run when the operators were tired or stiff from other activities. The operators were all male college students.

The first six work spells were employed working at three different temporal patterns, twice at each one.

These three temporal patterns were, with the time for the 5 inch movement as the base of 100 per cent:

- Pattern A—110% for the 10 inch movement and
115% for the 11.5 inch movement
- Pattern B—200% for the 10 inch movement
300% for the 11.5 inch movement
- Pattern C—100% for the 10 inch movement
100% for the 11.5 inch movement.

Three different temporal patterns were presented to each operator for the first three work spells and then again presented in reverse order for the next three work spells. No more than two operators worked at any one of the six possible orders of presentation of the three different arrangements.

The results from these first six work spells showed the following:

1. In most cases the operators showed a constant improvement in the number of successful cycles from work spell to work spell.

2. None of the temporal patterns gave a very distinct feeling of rhythm.

Consequently the first six work spells were considered preliminary.

Work spells seven, eight, and nine were the same for all operators and were as follows:

Work spell No. 7 allowed, with the time for the 5 inch movement as the base of 100 percent, 110 percent for the 10 inch movement and 200 percent for the 11.5 inch movement. This allowed the operator to work with constant effort over the cycle of three insertions and then either make a comparatively slow return movement to the first hole or to return rapidly and pause an instant before starting a new cycle.

Work spell No. 8 allowed, with the time for the 5 inch movement as the base of 100 percent, 110 percent for the 10 inch movement and 115 percent for the 11.5 inch movement. (This was the same as the previous pattern A.)

Work spell No. 9 was a repetition of the conditions of work spell No. 7.

Since the first six work spells usually showed an improvement from work spell to work spell regardless of the temporal pattern and since none of the patterns gave

a very effective feeling of grouping, while work spells Nos. 7, 8, and 9 were free from this learning effect and included patterns which gave effective grouping, the data from the first six work spells were considered as preliminary and the data from Nos. 7, 8, and 9 formed the basis for the conclusions reached.

Results

All of the operators, except one, reported a feeling of grouping the work into cycles of three insertions starting with the hole preceding the five inch movement for work spell No. 7. The operator who did not report grouping took the admonition, "Let's see what you can do!", too seriously, and when he found that the feeling of grouping seemed to be annoying he used the leeway provided in the temporal pattern to smooth out the timing to make merely regular work.

All of the operators reported grouping for work spell No. 9 which was a repetition of the conditions of work spell No. 7.

In short, work spells No. 7 and No. 9 were employed in doing the task rhythmically.

For work spell No. 8 none of the operators reported a feeling of grouping but reported a feeling of merely continuous, regular work.

These subjective impressions were received after the completion of all the work spells at which time the operators were first informed of the number of misses they had made during each work spell. (The complete verbal reports are given on page 111.)

Now it is true that the operators had worked twice previously at the arrangement presented in work spell No. 8, but on the other hand no further learning took place between work spell No. 7 and No. 9 as evidenced by the fact that the operators averaged more misses at the same arrangement in work spell No. 9 as compared to No. 7.

Furthermore, all the operators reacted in practically the same manner to the temporal patterns of work spells Nos. 7, 8, and 9, indicating that the difference in the order of presentation of the patterns of the first six work spells did not influence the results.

It seems certain that the operators had passed the critical point where learning ceases as far as their ability to insert the electrode into the holes as required by any temporal pattern was concerned, and that the data indicates the results of varying this pattern. Furthermore, one pattern was rhythmical in that it created a feeling of grouping. The other pattern did not and was merely

TABLE I

FIVE MINUTE MOVING TOTALS OF THE NUMBER OF CYCLES MISSED DURING RHYTHMICAL WORK
(BASED ON AVERAGES OF WORK SPELLS NOS. 7 AND 9)
(Five minute moving totals placed at last minute in total)

Minute of Work Spell	Operators' Numbers									
	1	2	3	4	5	6	7	8	9	10
5	4.0	2.0	1.5	0.5	7.5	4.0	2.5	1.5	1.5	1.0
6	3.5	3.0	2.0	0.5	8.5	5.0	2.5	1.5	1.5	2.0
7	4.0	2.5	1.5	0.5	10.0	5.0	3.0	2.0	1.5	3.0
8	3.5	3.5	1.5	0.5	11.0	5.0	3.0	3.5	1.5	3.0
9	3.5	4.5	1.5	1.0	10.0	4.0	3.0	4.0	1.5	5.0
10	3.0	4.5	2.0	1.0	10.0	3.5	1.5	4.5	2.0	5.5
11	3.0	5.0	2.5	2.0	9.0	2.0	1.5	5.0	3.0	6.0
12	2.5	5.0	2.5	2.5	6.5	1.0	1.0	5.0	3.5	6.0
13	4.5	4.0	2.5	2.5	6.5	1.0	1.0	4.0	4.0	7.5
14	3.5	4.5	4.0	2.0	7.0	1.5	2.5	4.5	5.0	6.0
15	5.5	4.5	3.0	2.0	8.0	1.5	4.0	5.0	4.5	6.0
16	6.5	4.5	2.5	1.5	9.5	2.5	4.0	5.5	4.0	5.0
17	7.0	4.5	2.0	1.0	11.0	3.0	4.5	5.0	5.0	6.0
18	5.5	3.5	2.5	1.0	9.5	3.5	4.0	5.0	5.5	5.5
19	5.5	1.5	1.5	1.0	9.0	3.5	3.0	4.5	4.0	7.0
20	4.5	2.0	3.0	0.5	9.5	3.5	2.5	3.5	3.5	7.5
21	4.0	1.5	2.5	0.5	9.5	3.5	3.0	4.0	5.0	7.5
22	4.5	1.5	3.0	0.5	8.0	3.5	4.0	3.5	4.5	6.5
23	5.5	3.0	4.0	0.5	11.0	3.5	4.0	4.5	3.5	6.0
24	6.5	5.5	4.0	0.5	12.0	5.0	5.5	4.5	3.5	5.5
25	8.0	6.0	3.5	0.5	12.5	5.5	5.0	5.0	4.0	5.5
26	7.0	5.0	5.0	0.0	10.5	5.5	5.0	3.0	2.0	6.0
27	7.5	5.0	5.5	0.0	11.0	6.5	6.0	4.0	2.5	7.0
28	7.5	4.0	4.5	0.0	9.0	7.0	8.0	4.5	4.5	9.0
29	7.0	1.5	5.0	0.0	8.0	5.0	8.5	5.5	4.5	8.5
30	5.5	1.0	5.5	0.5	5.5	4.5	10.0	6.0	5.5	7.5

regular. Also, the rhythmical cycle called for the three insertions in only 0.107 second less than the merely regular cycle which is a difference of 0.53 percent less of the total cycle time, with this extra time being dissipated in rest or in a comparatively slow movement between cycles.

The number of cycles missed by each operator each minute of work spell No. 7 was added to the number of misses for each corresponding minute of work spell No. 9 and average. The five minute moving totals of the number of cycles missed, for each operator, based on these averages, are given in Table I.

The five minute moving totals of the number of cycles missed by each operator during work spell No. 8 are given in Table II.

The total number of cycles missed by each operator during work spells Nos. 7, 8, and 9, and the average of work spells Nos. 7 and 9 for each operator are given in Table III.

The group average five minute moving totals of the

number of cycles missed during rhythmical work (work spells Nos. 7 and 9 averaged) and during merely regular or non-rhythmical work (work spell No. 8) are given in Table IV.

TABLE II

FIVE MINUTE MOVING TOTALS OF THE NUMBER OF CYCLES MISSED DURING MERELY REGULAR WORK
(WORK SPELL NO. 8)
(Five minute moving totals placed at last minute in total)

Minute of Work Spell	Operators' Numbers									
	1	2	3	4	5	6	7	8	9	10
5	2	0	0	0	3	0	1	0	2	0
6	2	0	0	0	3	1	1	0	2	0
7	1	0	0	0	2	1	1	0	2	1
8	2	0	0	0	1	2	2	0	2	1
9	2	0	0	0	2	2	1	1	3	1
10	4	1	0	0	2	2	1	2	2	1
11	5	1	0	0	2	3	2	2	3	1
12	7	1	0	0	3	4	2	2	4	1
13	8	1	1	0	3	4	1	3	4	2
14	7	2	1	0	3	7	2	2	3	4
15	6	2	2	0	2	7	2	2	4	4
16	5	4	2	0	2	5	2	2	4	4
17	3	5	2	0	1	4	2	2	3	3
18	3	5	1	0	1	3	2	2	2	2
19	4	5	2	0	0	1	2	2	2	1
20	4	4	2	0	1	1	3	1	1	1
21	4	2	3	0	1	1	2	1	1	2
22	4	1	3	1	4	2	3	1	1	2
23	4	2	4	1	4	3	5	1	3	2
24	4	2	3	1	4	4	6	3	3	3
25	3	3	2	1	3	4	7	4	3	3
26	4	4	2	1	4	5	7	4	3	4
27	6	5	2	0	2	7	9	4	3	6
28	4	4	1	0	2	6	7	4	2	7
29	3	5	2	0	2	5	6	3	2	6
30	4	4	2	0	2	6	4	2	2	7

TABLE III

TOTAL NUMBER OF CYCLES MISSED BY EACH OPERATOR DURING EACH WORK SPELL AND AVERAGE OF WORK SPELLS NOS. 7 AND 9

Work Spell	Operators' Numbers										Average
	1	2	3	4	5	6	7	8	9	10	
7	31	17	12	6	71	8*	22	21	18	34	24.0
8	23	14	8	1	13	20	18	11	14	16	13.8
9	30	23	25	4	35	37	29	30	24	32	26.9
7 + 9	30.5	20	18.5	5	53	22.5	25.5	25.5	21	33	25.4
2											

* This is the work spell in which the operator used the leeway in the pattern to avoid grouping.

TABLE IV

GROUP AVERAGE FIVE MINUTE MOVING TOTALS OF THE NUMBER
OF CYCLES MISSED DURING RHYTHMICAL AND
MERELY REGULAR WORK
(Five minute moving totals placed at last minute in total)

Minute of Work Spell	Rhythmical	Regular
5	2.60	0.8
6	3.00	0.9
7	3.30	0.8
8	3.60	1.0
9	3.80	1.2
10	3.75	1.5
11	3.90	1.9
12	3.55	2.4
13	3.75	2.7
14	4.10	3.1
15	4.40	3.1
16	4.55	3.0
17	4.90	2.5
18	4.55	2.1
19	4.05	1.9
20	4.00	1.8
21	4.10	1.7
22	3.95	2.2
23	4.55	2.9
24	5.26	3.3
25	5.55	3.3
26	4.90	3.8
27	5.50	4.4
28	5.80	3.7
29	5.35	3.4
30	5.15	3.3

Conclusions

For the operators used in this experiment and for the work spells tested:

1. The operators did not prefer the rhythmical method to the merely regular but preferred the merely regular.

2. The rhythmical work was not less fatiguing since the group average five minute moving total of misses made during rhythmical work is just as much greater than the corresponding figure for the merely regular work at the end of the work spell as it was at the beginning and in addition, both of these values vary in approximately the same fashion throughout the work spell.

3. A common complaint of the operators was that with the rhythmical work they had to "restart" themselves for each cycle while with the merely regular work they just worked "continuously" indicating that the merely regular work was more conducive to automaticity than the rhythmical.

4. All of the operators averaged a greater number of cycles missed during rhythmical work than during the merely regular work indicating that the rhythmical work was less efficient in that the workers completed fewer cycles in an equal period of time than they did with the merely regular work.

Remarks of the Operators

Remarks were solicited from the operators after the completion of the ninth work spell. Leading questions were avoided.

Operator 1.

This was more difficult than work spell eight. It makes groups of three holes but breaks the continuity of action. I have to accelerate at hole 1 to hole 2 and then almost stop at 1 again before inserting the peg. Very annoying.

Operator 2.

I did not like this as well as the last run (meaning work spell No. 8.) I came down too fast on hole 2 probably due to having to restart myself each cycle.

Operator 3.

Good grouping from this into cycles of three holes. The last work spell gave me no feeling of grouping but was just continuous work. There did not feel as if there was more fatigue this time.

Operator 4.

Good grouping and breaking of work into cycles this way but requires slightly more concentration. I would prefer the merely regular.

Operator 5.

I felt excellent grouping on this work spell No. 9 but did not during No. 8. I have to concentrate to start each cycle with a new impulse on work spells Nos. 7 and 9.

Operator 6.

Good grouping on this but it requires closer attention (than work spell No. 8) while it appears not to. Gets very hard toward end.

Operator 7.

Good grouping which I liked, but you just can't hit them (the holes) at the end. You start the cycle too

(Please turn to page 116)

REVIEWS

Wage Incentive Methods. By Charles W. Lytle. Revised Edition, The Ronald Press, New York, 1938, pages vii, 468. (\$6.00)

This revision of an earlier important contribution to the literature of management appears perhaps under slightly less favorable circumstances in this year 1938 than did the first edition nine years ago in the closing days of what was then bravely referred to as a "new era." In this modern day of numerous alphabetical combinations under governmental auspices designed to foster make-work programs; of millions of unemployed; of well-meant though not very original efforts to alleviate this sad condition by schemes to share existing employment through shorter working day and week; of great popular emphasis upon high wage policies as means of maintaining individual purchasing power rather than individual productivity; one scarcely expects that wide spread interest will be attracted by a book on *Wage Incentives*, even when that book is the product of so competent a student of the subject as Professor Lytle undoubtedly is.

Nevertheless, wage incentives always have occupied an important sector in the thinking of those who are interested in advancement of the science of management. The early literature of scientific management abounds with reference to such devices, and one could no doubt prepare a bibliography of wage incentive which would virtually constitute a history of the scientific management movement.

This early enthusiasm for incentive devices was not without its unfortunate aspects. Wage incentives are nothing more than a tool of management, albeit a useful one. In concentrating attention upon this and other devices at the risk of failure to formulate a coherent philosophy of management, the scientific management movement perhaps has in some respect failed to live up to the expectations of those who first gave it impetus and who, to their credit, may scarcely be accused of the fatal error of mistaking means for ends,—of mere gadgets for fundamentals.

One of the results of this confusion of thought by well-meaning devotees has been the multiplication of incentive plans of no really distinctive merit which Professor Lytle rightly deplores. This reviewer approves heartily of the author's determination to present no new schemes of his own; of his contention that there are relatively few distinctive types of incentive plans and that these few may readily be classified and described. Too often these plans have been designed merely to have something to sell. In marketing them and in magnifying refinements where no real basis of distinctive merit existed, there has sometimes been a deal of chicanery which has contributed in considerable measure to the disrepute in which these self-styled efficiency experts have been held. Too often this sales appeal has been based upon no firmer foundation than the dubious implication that low labor costs may be achieved merely by drawing a certain type of wage curve upon a chart.

All this is unfortunate, for it has tended to belittle the very real importance of incentives in their relation to productive efficiency. Anyone who has witnessed the conversion of a listless and disgruntled workman into a virile and co-operative "organization man" through wise application of incentives need

not be reminded of the importance of well chosen devices of this sort when placed in the hands of a discerning management.

For managers of this type, who—while appreciating fully that methods of wage payment do not automatically solve all the perplexing problems of shop relationships—do at the same time recognize in such methods important aids to efficiency, Professor Lytle's penetrating and thoroughgoing analysis of all really essential aspects of the subject provides an indispensable handbook.

Careful comparison of this revision with the original edition reveals many references to documentary evidence which has been published in the decade since the first appearance of this work, and the addition of one entirely new chapter entitled "Recent Developments and Incentives." To those who are not already familiar with this study, this reviewer can say without reservation that, in his opinion, it should be on the required reading list of everyone who is actively engaged in industry in attempting to work out a satisfactory basis of relationship between employers and employees. By WILLIAM N. MITCHELL, Associate Dean, School of Business, University of Chicago.

Papers on the Science of Administration. By Luther Gulick, L. Urwick, James D. Mooney, Henri Fayol, Henry S. Dennison, L. J. Henderson, T. N. Whitehead, Elton Mayo, Mary P. Follett, John Lee, V. A. Graicunas, Institute of Public Administration, New York, 1937, pages v, 195.

Here is to my mind the most important management volume of the year. Here is a "must" book for everyone who pretends to any serious interest in the development of a science and art of administration. Here is a most hopeful index of the growing awareness in America that the problems of organization are of such nature that the body of data constituting the problem is in very truth a newcomer among the social sciences, one to which high intellectual effort has to be devoted.

The science of administration, the principles of organization, the areas of executive effort, the definitions and interrelations of organization structure, of co-ordination, of leadership, of planning, of psychological insights,—all these are about to come of age together as embracing a field of human concern, exploration, experimentation, and formulation.

These eleven papers, selected from the work of nearly a dozen recognized authorities, are in a sense a preamble to the enunciation of a science. Their purpose is not definitive; it is declarative; not final but provocative.

Yet so well done is the editorial task that we have now for the first time in the English language a coherent body of articulate and oriented thought about a new subject. We have, in short, a science.

Critical appraisal of detailed contents is, in this place, less in order than emphasis upon the truth that at long last government and industry are by way of realizing that we have perforce passed the horse-and-buggy stage in administration. Here are phenomena and problems we must come to grips with. The needs are patent in large-scale bodies; but the principles will soon be seen to be applicable also in organizations of every size.

Not only have the increased duties laid upon governmental shoulders focused attention here—but corporations with wide

geographic spread have become more numerous; and institutions of all kinds, educational and philanthropic, acknowledge weaknesses in structure, in human and technical interrelations and in morale. Increase, also, in the amount of joint conference machinery with organized bodies of workers at the different levels further points to administrative weaknesses not heretofore realized.

At present typical managerial thinking is myopic in this whole area. Were the SAM as professional a body as some day it may be possible or desirable for it to become, it might seriously be proposed that applicants for membership pass an examination in the content, meaning and implications of a volume like this one. For it may well prove to mark an epoch in the same way as did Taylor's "Principles of Scientific Management."

One final word is in order, as indicating the contemporary and forward-looking quality of this work. It is a document revealing the inevitable synthesis which must be achieved in the study of human problems, of data and of methodology drawn from all the social sciences. These essays reveal unmistakably that there is no valid line of demarcation to be discerned as among the social studies, wherever the conduct of mankind in association is being examined. That is a great gain. It should gradually have its influence in university instruction—whether vocational or cultural. For it is hardly unfair to any that the poverty of our total social science effort as a predictive and formative influence, is directly traceable to the fact that studies here have been ridiculously compartmentalized. The science of administration will be the science of men in organization, striving together to realize common desires. As such it will find illumination, for example, in comparative anthropology, in physiology, in psychoanalysis, in philosophy—no less than in the more obvious fields of economics, sociology and history.

This volume, in short, is a splendid, superlatively valuable contribution correctly timed to mark the birth of a new instrument for human amelioration and for the facilitation of fraternal relations. By ORDWAY TEAD, Editor of economic books, Harper & Brothers, New York.

How to Develop Personal Power. By Dick Carlson, Harper & Brothers Publishers, New York and London, 1937, pages xiii, 228. (\$2.00)

How to Develop Your Personality. By Sadie Myers Shellow, Harper & Brothers Publishers, New York and London, republished 1937, pages xvi, 308. (\$1.00)

The first is an inspirational book and like all such, it may do more harm than good by giving its readers false hope of achieving dreams beyond their abilities. Although its title implies that it is a "How to Develop" book, it really is a "What to Develop" book.

It spends most of its pages in an analysis of qualities which if possessed by a person should, according to the author, give that person personal power and success. The author points out that all these qualities can be developed.

It reads like a good book for Y. M. C. A. secretaries.

The second is really a "How to Develop" book. There is no question but that this cheaper edition five years after the book

originally appeared has a place to fill. To those who, because of its cost, have hesitated buying the earlier edition this reviewer says, "Buy it now and study it. Make its scientific and practical information your personality development guide."

The author in simplest terms makes a thorough analysis of what is commonly called personality. She breaks up the term into its several components, shows how they develop consciously or unconsciously and how those which may be changed can be changed through conscious effort.

The components of personality are listed as, Appearance, Expression, Intelligence, Interests, Emotions and Social Adaptation, all of which can be developed or improved upon. The author shows how.

This reviewer considers the book one of the best of its kind on the subject. It could have been improved upon by the elimination of the chapter on the nervous system and by the shortening of several chapters which seem to show the earmarks of padding to make a good small book into a large book. This is the inevitable result of trying to meet the demands of publishers for a \$3.00 book when a \$1.00 book was the author's intention. By J. L. ROSENSTEIN, PH.D., Consulting Psychologist, Indianapolis.

Collective Bargaining for Today and Tomorrow. Edited by Henry C. Metcalf, Harper & Brothers Publishers, New York and London, 1937, pages x, 182. (\$2.25)

C. I. O. Industrial Unionism in Action. By J. Raymond Walsh, W. W. Norton & Company, Inc., New York, 1937, pages 293. (\$2.50)

When Labor Organizes. By Robert R. R. Brooks, Yale University Press, New Haven, 1937, pages x, 361. (\$3.00)

All of these books deserve attention. They are especially to be recommended to those in charge of personnel problems in industry. However, for those whose interest in the productive process is primarily along the line of economy in time and motion, there may be difficulty in accepting the socialized thought of most of these authors. For their concern has more than the profit motive behind it. They are thinking in terms of relieving the primary and secondary strains and stresses of the present social structure.

The little volume of lectures on *Collective Bargaining for Today and Tomorrow*, which Doctor Metcalf has brought together, is the work of nine supporting contributors, designed "to present . . . the experience of business with the best practice in negotiating collective agreements." But it does not stop there. It anticipates the near future when the courts may be called upon to determine the legality of the worker's claim to a vested right in his job, and his right to sit down on it when he thinks that his partner, the employer, is trying to get away with too much of the profits. At this point in the series (with Mr. Scoville Hamlin on the platform, pages 109-124) important questions of public law and policy are briefly considered. What is to happen if the courts take the traditional position

with respect to property rights—i.e., that such rights exist only for the owner; and that the Constitution also guarantees him the liberty to hire and fire at will? Has the worker no rights? Yes. He may go to the polls. He may demand that Congress enact laws protecting his right to bargain collectively, to picket peacefully, and even to permit him peacefully to occupy the plant, pending the settlement of a dispute. But if this is contrary to the judicial interpretation of the Constitution, that which we so proudly hail as "the American way" may prove to be something less than a happy solution. For this controversy between employer and employee may end by being a controversy between different departments of the government, with a consequent paralysis of the system.

But Mr. Hamlin does not leave the matter here. He goes so far as to suggest the necessity of a reinterpretation of the fundamental law (presumably by a liberalized judiciary rather than by constitutional amendment) in such a way as to rationalize the basis of contractual relations between capital and labor. A minimum return to capital, which would take care of all reasonable costs, would still leave a return to labor sufficient to cover minimum wage standards. Each industry would have its own yardstick for determining these minima. And the earnings, or profits, above these costs would be divided between the investors of capital and of labor "on the basis of their respective investments and contributions to production." (pages 121-122.) But divided by whom? From a lecture platform one may be pardoned for not following this important question into all of its ramifications. Mr. Ordway Tead, whose lecture follows, and Mr. Metcalf's concluding remarks, emphasize the necessity of "a more equitable distribution of corporate income" and that "labor as well as capital must be clearly regarded as an investment."

Mr. Brooks in *When Labor Organizes*, finds himself (on page 320) in much the same position, but time and space do not so inhibit him. He tries heroically—and not without a degree of philosophical success—to point a way out without bogging down in the mire of fascism. His goal is more democracy in industry—and a more socialized system generally. But he only indicates the general direction to be taken, and leaves the reader with the vague feeling that even Mr. Brooks has slight hopes of seeing his ideal in operation. However, he has thoroughly covered the field of recent labor history, and successfully interwoven its background. As a general volume on current labor problems, and labor's position in the whole social structure, this one takes its place at the head of the list.

The most fascinatingly written volume in the group is that of Mr. Walsh. His style is compelling. His calm objectivity is admirable. And his sources are obviously first hand, and the best. As his title suggests, he deals primarily with industrial unionism, past and present, and its relation to industry, to the public and to craft unionism. The author's concluding appeal is primarily for peace within the labor camp. The reader is left with the impression that Mr. Walsh has not so much thought of dictatorships as of another frustration of organized labor through the petty bickering of labor leaders, and through sporadic instances of vigilantism. By JOHN DAY LARKIN, Associate Professor of Political Science, The Armour Institute of Technology, Chicago.

British Experiments in Public Ownership and Control.
By Terence H. O'Brien, W. W. Norton & Company, Inc., New York, 1938, pages 304. (\$3.00)

The British public utility trust is, typically, privately owned but publicly managed (by "Trustees") and hence should attract the interest of those who seek compromise in a period of social strain and institutional flux. In the present volume, Terence O'Brien, Oxford graduate and former assistant to the late Ivy Lee, deals with the three principal examples of this corporate form of management, namely, the Central Electricity Board, the British Broadcasting Corporation, and the London Passenger Transport Board. Readers of this JOURNAL will be interested in the fields of enterprise with which the study deals, as well as with the management aspects of the organizations which have been set up to deal with the problems. It is no exaggeration to say that national power policy, the best form of organization for broadcasting, and the co-ordination of municipal transport are still in the "unsolved" list of American public questions.

The present study is one of those sponsored by the British Institute of Public Administration and is in the nature of a management survey. It brings up to date the reviewer's treatment of the same enterprises in *British Public Utilities and National Development*, and supplements William Robson's recently edited *Public Enterprise*. These semi-socialized industries have now been in existence long enough to permit of practical and intensive analysis.

The book is recommended to readers of this JOURNAL, for it was written specifically for students of management. The plan of the study is to examine each undertaking under twelve headings, namely, origin, function, economic and financial status, size and composition of board, operation, the responsible minister, the role of Parliament, the relations between the board and the management, control and recruitment of staff, area, advisory bodies and public relations. The method is commendable from the standpoint of making available basic data and occasional flashes of insight, but it is bound to disappoint those who seek a more scholarly and systematic treatment. So cautious is the writer that he shies away from expressions of opinion concerning social results or the merits of this form of organization and control as compared with others. His nearest approach to a general conclusion is that it is still too early to say whether the public corporation is inherently superior to the older departmentalism and he seems to be skeptical about its representing a new type of organization which may be used as a model for wider application. The reviewer is inclined to believe that the latter part of this conclusion will not stand up under a broader and more systematic analysis than the one given it; this broader, social interpretation is greatly needed. By MARSHALL E. DIMOCK, Associate Professor of Public Administration, The University of Chicago.

Labor's Road to Plenty, the Return to the American System of Productivity. By Allen W. Rucker, L. C. Page & Company, Boston, 1937, pages 221.

Labor's Road to Plenty is a clear and vigorous statement of a most attractive proposition—that if we would have more, we

should produce more. As the subtitle "The Return to the American System of Productivity" indicates, the author does not claim to have discovered a new road to plenty. He rejects the new discoveries to marshal an impressive array of facts in support of sticking to the old path. The new roads which lead nowhere he regards as importations from Europe; the old way is characteristically American. Many Americans, particularly those in management circles, will surely find this central theme most attractive. The proposition was included by the National Association of Manufacturers in its recent statement of principles. It is put so persuasively and supported so stoutly in Mr. Rucker's book that P. H. Whaley, the editor of the Whaley-Eaton Service, has contributed an introduction in which he declares, "The book should have a decisive influence in solving the exigent problem it attacks. The study is one of the most important economic contributions of the era."

Mr. Rucker supports his proposition, not by any elaborate theorizing, which he avoids and apparently dislikes, but by the facts, especially the facts to be found in our official statistics. The census of manufactures is his most important source of statistical information, although considerable use is made of price and wage information from the U. S. Department of Labor. The more important of his points may be enumerated as follows:

1. The annual income per wage earner and the saleable output per worker (the value added by manufacture per worker) go up and down together. The wages bill is an almost constant per cent of the value added to the raw materials.
2. The reduction in employment opportunity is primarily traceable to factories going out of business. From 1923 to 1933 there has been little change in the average number of employees per going factory.
3. Since 1923, the active manufacturing companies without net income have been a steadily increasing percentage of all companies reporting to the Treasury.
4. Employment opportunities in the various industrial groups are related to the per cent of corporations with net income.
5. Increases in the rate of wages do not mean proportionate increases in annual incomes, and rigid maintenance of wage rates does not serve to sustain annual income—unless the productivity rate per worker so warrants.
6. Shortening the work week, either by conditions or by compulsion, does not expand the total employment opportunity but is usually accompanied by a reduction of opportunities.
7. The results seen in manufacturing generally are confirmed by a study of various industries, for (a) labor's purchasing power increases and is best maintained in those industries where the wages bill is a relatively small per cent of the value added by manufacture and (b) employment opportunities increase and are best maintained in those industries where the value added by employee (which Mr. Rucker calls the productive efficiency) is highest.
8. When wage rates and prices of finished goods are high relative to farm prices, employment opportunities decline.
9. Labor's total income in dollars does not rise above farm income.

Mr. Rucker is not content to make out a strong case against trade union and governmental emphasis on short hours and

high wage rates. As he rightly remarks, "Well established theories are rarely dissipated by factual reasoning alone." He seeks a constructive alternative and finds it in the principle of paying according to productivity and in the principle of so setting prices that the value added by manufacture will be at its maximum.

Unfortunately for his management readers, Mr. Rucker does not go into much detail on the application of the proportionate-to-productivity principle to individual plants. This, he says, is a technical matter beyond the scope of this book. This is especially unfortunate because other plans based on the sound principle of mutuality of benefits have come up against important obstacles to their practical application. The general plan is evidently to have the manufacturer determine from his records the average relation between payrolls and value added by manufacture and to have the "normal" thus determined used as a basis for labor compensation. It is significant that the percentage "should not be fixed for more than a single year," for, according to Mr. Rucker's argument, it is as obviously unsound to try to increase labor's percentage as to increase hourly wage rates. The upshot of the book is that "the essential task of management and labor is to collaborate in promoting the cost and price conditions which will permit optimum sales volume and steady plant operation at the most efficient level."

This brief outline of Mr. Rucker's argument and conclusion will perhaps suffice to indicate its character, a character which, it is clear, will make many readers most enthusiastic. Equally certain, however, is the strong disapproval of others. Even though the author, in the foreword, asks that "the reader may 'read not to contradict and confute, nor to believe and take for granted . . . but to weigh and consider,'" most of his readers will not do as he asks. He asks also, without much greater prospect of success, that the reader whose questions are not answered in the text should "favor the author by bearing in mind that such questions must necessarily have also presented themselves to him and have been answered at least to his satisfaction."

One line of criticism which the book will encounter will raise questions about many of the author's sweeping generalizations. For example, the manufacturing wages bill is not a constant percentage of the value added by manufacturers; the variations are small but they may be of considerable significance. If the variations were stated not in terms of the value added but of manufacturing profits they would appear very large. Again, the persons employed per establishment have not greatly changed, but they have not been a constant. Much more important, however, would be the criticism that, while reducing hours and increasing wage rates have been greatly overestimated and have been carried to dangerous extremes, it is unwise to condemn them entirely. For his own part, the reviewer doubts that wage and hour regulation had much to do with declining employment opportunities before 1929. If additional opportunities were not opening rapidly in manufacturing, the population census revealed significant increases in other gainful occupations.

Time alone will tell whether management will accept the author's invitation to lead in spreading his doctrine. Management would do well, in your reviewer's opinion, to study the

book, but to go slowly about adopting it as fundamental doctrine. It is very attractive, simple, forcefully put; but it is another rational economic doctrine, not in close touch with the emotional complexities and personal bewilderments of the present. Any appeal to return to the good days of the old American system requires first of all an attempt to find why we have strayed from the path. The chief weakness of the book is that it can find nothing but fallacy in the major developments of the post-war period. It presents no interpretation of the business cycle or program for dealing with the ups and downs of industry. It has no answer for those who agree that more production should be the aim of the unemployed and of the owners of idle factories alike but who claim that the basic cause of all our difficulties is lack of mass purchasing power. It has no answer, also, for the group who believe our economic system is sound but is being run by incompetent managers. Such propositions may well be false; indeed, your reviewer is sure that they are; but the feelings behind them are part of our industrial situation. In your reviewer's judgment, the book is well worth the careful reading the author asks for; but, like other simple, rational essays on economics, it does not do full justice to the complexities of management problems. By RICHARD S. MERIAM, Professor of Business Economics, Harvard Business School, Boston, Mass.

Comment

(Continued from page 85)

The second, a tool for finding what can be expected of the worker; how he can produce with the least expenditure of effort and fatigue to himself, with the least expense to his employer. Both are measuring sticks in human relations. This issue of the JOURNAL presents a worthwhile paper which deals with the first of these tools, and two others on important phases of the latter. These papers are not only in keeping with the times but are significant contributions to the literature on human relations.

How the Employer Can Reduce Unemployment Taxes

(Continued from page 102)

nection it may wish to work with some reputable employment agency as a clearing house and it is even possible that some energetic agency could, in this way, co-ordinate the efforts of a number of employers to the benefit of all.

When an employer attempts to stabilize his working force to reduce labor turnover, and hence unemploy-

ment tax, his chief obstacle is his own viewpoint. Once he accepts the inevitableness of stabilization, he will come to *think of each employe as a person* and not merely as a name on the payroll. Most employers are prone to accept present employes at face value and have long since forgotten the backgrounds of those employes, particularly backgrounds before coming with the company. In a reconsideration of the individuality of employes, there is the possibility of finding much hidden talent among present employes and so of binding those employes closer to the company. How many records of your employes have you reviewed in the last year?

You will find when you attempt to put into effect various stabilization devices, that these will in turn point out the necessity for other improvements which will rebound to your ultimate profit. What you now look upon as an unemployment nuisance, you may in the future regard as a blessing in disguise.

(Note: A comprehensive summary of all state unemployment laws is provided in "Analysis of State Unemployment Compensation Laws," Supt. of Documents, Washington, D. C.—15c)

A Study of Rhythm in Hand Motions

(Continued from page 111)

fast or too late. All in all, I would prefer the (merely regular) way of work spell No. 8.

Operator 8.

Good grouping but this seemed to spoil my aim. I would prefer last run (work spell No. 8). Last run gave me a feeling of continuity.

Operator 9.

Good grouping. Excellent. No grouping from arrangement of work spell No. 8. This makes cycles but other does not. I prefer the other.

Operator 10.

Good grouping but annoying as it breaks continuity of work and requires starting each cycle.

From "Rhythm in Hand Motions," a University of Iowa Master's thesis by Marvin E. Mundel. And Barnes, Ralph M. and Mundel, M. E., "Studies of Hand Motions and Rhythm Appearing in Factory Work," University of Iowa Studies, Studies in Engineering, Bull. No. 12, March 1, 1938.